# A STUDY ON

# SOBAI

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# INTRODUCTION

Siddha system of Medicine is as old as mankind and dominated the civilisation of the southern peninsula of India. It is a treasure – house of secret science. Its origin is traced far back to the vedic times, about 5000BC. During this period medical history was associated with mythological figures. Siddha system can be considered as the crown of traditional arts of the ancient world owing to its richness and simplicity.

According to this system, the human body is the replica of the universe and so are the food and drugs irrespective of origin.

The siddhars were those, who had renounced the world after experiencing its instability and uncertainity.

In a nut shell, Thirumoolar the father of Siddha system defines medicine as follows.

"மறுப்பது உடல்நோய் மருந்தென லாகும்
மறுப்பது உளநோய் மருந்தென சாலும்
மறுப்பது இனிநோய் வாரா திருக்க
மறுப்பது சாவை மருந்தென லாமே".

By this means, our ancient siddhars noted that the definition for medicine and this shows their dynamic knowledge about the human body and various disorders affecting it.

Siddhars formulation are based under the theory of Pancha Bootham, namely Mann, Neer, Thee, Vayu and Akayam which are the

fundamental principles of creation, protection and destruction. The three humoural forces behind the above three are referred to as Vatha, Pitha and Kabha respectively. Any imbalance in their ratio causes diseases.

Hence in the diagnosis of the diseases trihumoural pathology, analysis of naadi and envagai thervugal plays an important role.

This siddha medical science has its own well developed chemistry. The tireless striving in the direction of the development of alchemy has resulted in the genesis of thousands of plants, minerals and metallic preparation. The treatment also includes dietary modifications and lifestyle modifications.

**Kuzhandai Maruthuvam:**

Kuzhandai Maruthuvam i.e. siddha pediatrics an important branch in siddha system of medicine. It deals with the diseases of children according to paruvangal, their essential nature and description of various treatments with specific medicines.

Children are the feature citizens of a nation and as such their health are paramount importances to the nation. Hence a good and well sophisticated society can be formed only when the children in that society are taken care of right from the time of birth.

According to “Bala Vagadam”, SOBAI NOI is started from the day of fertilization, which can be prevented by high nutritious diet.

Nutritional disorders are more common in developing countries like India. Sobai is one of the Nutritional disorder, is more prevalent in infants and children, and also been clearly described in Siddha literatures.

According to the WHO, hunger and malnutrition is the gravest single threat to the world's public health and malnutrition is by far the biggest contributor to child mortality, present in half of all cases.

The author selected "**Nelli Vadagam**"and "**Sobai Kudineer**" as the drug of choice for this study, which is easily palatable for the children. All the patients were treated with this drug and results are dealt with.

# AIM AND OBJECTIVES

SOBAI is one of the major nutritional disorders of children. It is more common in the developing tropical countries like India, in which people of different socio – economic status are found. Nutrition is the provision, to cells and organisms, of the materials necessary to support life. Many common health problems can be prevented or alleviated with good nutrition. Malnutrition is globally the most important risk factor for illness and death, contributing to more than half of deaths in children worldwide. Prevention of malnutrition in children starts with an emphasis on prenatal nutrition and good prenatal care. If the necessary steps have been taken to literate people about malnutrition the incidence of SOBAI would have been reduced.

## OBJECTIVES

- To collect the literary evidences regarding the disease "SOBAI".
- To have a clinical trial on SOBAI affected children with the selected medicine viz, NELLI VADAGAM and SOBAI KUDINEER.
- To evaluate the disease SOBAI clinically by careful examination on etiology, clinical features, treatment, prognosis etc.,

- To have a complete study of the disease SOBAI under the heading of mukkutram, Udal kattugal, Envagai Thervugal etc.,
- To study the extent of correlation of SOBAI as explained in the siddha literatures with "**Nutritional dropsy**" in modern literatures.
- To utilize the possible diagnostic measures in the confirmation of the diagnosis of the disease.
- To analyse the trial medicine Bio-chemically and pharmacologically for complete evaluation of the medicine.
- To make an awareness among the parents about the prevention of the disease in children.

# SIDDHA ASPECTS

## (SOBAI)

**Eyal (Definition):**

Sobai vitiates blood and causes paleness of body, abnormal swelling of upper limb, lower limb, face and abdomen.

**Veru Peyarkal (Synonyms):**

Sohai, Sovai, Thommai, Athaippu, Surappu, Oothal.

Since it causes swelling it is known as Sobai. Since Sobai causes inactiveness, it is also known as Sovai. Since it causes abnormal swelling of body it is also known as Oothal or Athaippu or Surappu.

**NOI VARUM PARUVAM:**

1. Vatha sobai - At the commencement of third year of age.
2. Pitha sobai - At the second year of age

**NOI VARUM VAZHI (ETIOLOGY):**

1. According to **Siddha Maruthuvam**, sobai is due to,

- Anaemia
- Intake of toxic materials
- Intake of contaminated food and improper food habits
- Exposure to chillness causes imbalance of three dhoshas,

  Produces malfunction of the Viyanan, finally leads to sobai.

2. "பாங்கான சன்னிபாதச் சுரங்கள்
பகர்சித்தப் பிரமை சன்னி பரவலாலும்
தேங்கான பன்னாகந் தீண்ட லாலும்
சில்விடங்கள் தேகத்தில் ஊறலாலும்
ஆங்கான சிறையிருத்த லடிபடுத லாலும்
அநேக வழி நடக்கை மலை யிருக்கையாலுந்
தாங்கான சலக்கரைகள் தனிலிருத்தல்
சாம்பல் மண்மா தவிடால் சோபை யாமே"

- யூகி சிந்தாமணி (பாடல் - 547, பக்கம் - 176)

By this verse, it is understandable that, sobai is caused by sanni, especially siddha bramai sanni, snake bite, insect bite, imprisonment, staying in hill stations, living close to the water storages and intake of ash (Sambal), soil and hay (thavidu).

3. "ஆமெனும் வாதசோகை யணுகிடும் வகையைக் கேளாய்
பாமெனும் பழையதுண்டு பைங்கிளி யோடு தானும்
வாமெனும் புணர்ச்சி செய்து மல்லுசெய்த நுபோகித்து
காமெனும் ரவியிலேகி நடந்துதான் சென்ற பின்பே

"பின்புமே ராக்காலத்தில் பசித்துடன் புணர்ச்சி செய்தால்
அன்புமே வைத்துபித்த ராசனு மெழும்பிமேலே
துன்பமாய் மூலம் புக்கித் தோன்றிடும் வன்னிதானும்
இன்பமாய் வாதங்கூடி யிணைபிரி யாதுபாரே."

"இணைபிரி யாதிரண்டு மிருந்தால் குணத்தைக் கேளாய்
கனதனம் வற்றிப்போகும் கபாலமே சூடதாகும்
முளைச்சடம் பொங்கிப் போகு முலமே கருகிப் போகும்
துணைவிந்து மோகத்தாலே துன்பமே யணுகுந் தானே."

"அணுகுமே வாதசூட்டா லாத்தும மழிந்து போகும்
இணுகுமே மாதரோடே யியம்பிய புணர்ச்சி செய்தால்
அணுகிவிந் தூறிக் கர்ப்பம் வயிற்றினிற் சனிக்கும் பாலன்
முணங்கெனப் பிறந்த பின்பு மூன்றாண்டிற் சோகையாமே."

- பாலவாகடம்

According to **Bala Vaagadam,** vatha sobai is caused by the coitus immediately after the breakfast (intake of rice cooked the day before), exposure to sunlight after the sexual act and sex immediately after the dinner on that day will result in increase of pitham, which reaches the moolatharam. The action of pitham generates heat and this heat doubles the vatham and travels upwards and produces heat inside the skull.

Since this heat generates from the moolatharam, moolam is singed and the whole body emits heat, resulting in denaturizing the semen. If the coitus at this time results in child birth, the child will develop "Vatha Sobai" at the commencement of the third year.

4. "நாயகன் குணத்தைக் கேளாய் நாமுரை பிரிவிந் நூலில்
காயகக் காரன்காம போகத்தால் விரகஞ் சூழ்ந்து
சேயக மாதினோடே சேர்ந்துதான் புணர்ச்சி செய்து
காயமே வியர்வை கட்டக் களைக்கவே போகித்தாலே

களைக்கவே யிந்தவீதம் கன்னியோ டநுசரித்து
விளைக்கவே தாதுநட்ட மேவியே செய்வோ ராகில்
துளைக்கவே யன்னமுண்ணத் துடிதுடித் துயிர்ப சிக்கில்
இளைக்கவே புணர்ச்சி செய்வோர்க் கிவ்விதந டக்குந் தானே

நடந்தநா யகனும் பெண்ணாள் நாடியே யநுபோகத்தில்
படர்ந்துதான் கருவிலாகிப் பார்தனில் பிறக்கும் பாலன்
செடமது பித்தநீரால் தெளித்ததால் தேக மெங்கும்
கடமது கனக்க வூதிக் கண்ணுமே வெளுக்குந் தானே."

- பாலவாகடம்

According to this verse, the coitus with excessive excitement and increased perspiration causes "Pitha sobai". It will leads to denaturizing the semen. If this coitus will lead to birth of a child, when the man has sex with hunger, the baby is likely to suffer with "Pitha Sobai" at his second year of age.

## NOI ENN (CLASSIFICATION)

1. According to **Bala vaagadam**, sobai is classified into two types.

They are

1. Vatha Sobai
2. Pitha Sobai

**2. Theraiyar Vaagadam** classified the sobai into three types.

1. Varal sobai
2. Oodhu sobai
3. Sura sobai

3. As expressed in **Yugi Chinthamani**, sobai is classified into four types.

"தானான சோபையது நாலுவித மாகுஞ்
சாற்றிடவே வாதத்தின் சோபை யோடு
தேனான பித்தத்தின் சோகை யாகும்
சிலேட்டுமத்தின் சோபை திரிதோட சோபை."

- யூகி சிந்தாமணி (பாடல் - 546, பக்கம் - 176)

1. Vatha Sobai
2. Pitha Sobai
3. Kaba Sobai
4. Thirithoda Sobai

**4. Aathma Rakshamirthamennum Vaithiya Saara Sangiragam (Page: 142) Agasthiyar Guru Naadi (Page No: 116)** classify Sobai into two, namely,

1. Vatha sobai
2. Pitha sobai

**5. Anubava Vaithiya Devaragasiyam (Page No: 147) Jeeva Rakshamirtham (Page No: 185) Roga Nirnaya Saaram (Page No: 90)** classify the sobai into nine types on the basis of vitiation of individual dhoshas.

**They are,**

1. Vatha sobai
2. Pitha sobai
3. Kaba sobai
4. Vatha pitha sobai
5. Vatha kaba sobai
6. Pitha kaba sobai
7. Thirithoda sobai
8. Abikatha sobai
9. Vida sobai

The first three types occur due to single dhosha. The next three varieties occur due to the combination of either two or three dhoshas. Local swelling due to abscess formation and trauma is termed as "Abikatha sobai". The "Vida sobai", is due to toxic causes.

6. **"காணுமே வாதம் பித்தங் கபசுரஞ் சன்னிரத்தம்**
**காணுமே சோகை யாறு."**

**- பரராச சேகரம் - பாலரோக நிதானம்**

Based on this, sobai is classified into six types.

1. Vatha sobai
2. Pitha sobai
3. Kaba sobai
4. Sura sobai
5. Sanni sobai
6. Ratha sobai

7. According to **T.V. Sambasivam Pillai Agarathy**, sobai is classified in the following way,

1. Vatha sobai
2. Pitha sobai
3. kaba sobai
4. Ratha sobai
5. Kabaala sobai

6. Vida sobai
7. Pandu sobai
8. Kamalai sobai
9. Enburukki sobai
10. Kana sobai
11. Virana sobai
12. Eeral sobai
13. Sarvaanga sobai or Nisha sobai
14. Theera sobai
15. Soothaga sobai.

8. In **Rathina Churukkam – 500 (Page No: 15)**, sobai is classified into 16 types. This is inferred from the following verse.

**"சோபையது பதினாறுக்கும்."**

**MURKURIGAL (PERMONITORY SYMPTOMS):**

1. The symptoms produced in the initial stages are paleness of the body and loss of vigor.
2. Swelling of the ankle joints even in a little walk, dizziness, dyspnoea, vertigo, and fainting.
3. With the passage of time, it causes edema of the lower limbs, face and abdomen or from head to foot.

**POTHU KURIGAL (GENERAL SIGNS AND SYMTPOMS)**

1. According to **Bala Vaagadam**,

**வாத சோபை:**

"சோகைதா னணுகும் போது துடிக்கவே சுரம்வந் தெய்தும்
தாகமே யதிக மாகும் சலமது சிரசிற் கோர்க்கும்
தோகையாள் தனக்குப் பாறான் சுண்டியே சலமதாகும்
வேகமாய் மலத்தில் வாயு புக்கினால் வினைதான் பாரே

வினையது வருகு நேர்மை விபரமா யுரைக்கக் கேளாய்
அனையது வாகத்தானு மபானனாம் வாயு கூடி
புனையது கீழ்மூலத்திற் புக்கினால் தடிக்கும் தேகம்
கனலது மெத்தக் காணும் கண்ணது வெளுக்குந் தானே

வெளுத்திடு முதடு தானும் வெடிக்குமே தலைதான் நோகும்
கனைத்திடுஞ் சோபமாகிக் கைகால் களசதி காணும்
பழுத்திடும் முகம் வேறாகும் பாரமாய் பசியெடாதாம்
உளுத்திடுஞ் சிசுவுக் கேதானுட்டண மதிக மாமே

உட்டண மதிக மானா லொடுங்கிடுந் தாது நாடி
உட்டண மதிகந் தன்னா லுடலது வற்றிக் காணும்
உட்டண மதிகத் தாலே மூலமே கடுப்புண்டாகும்
உட்டண குறியே கண்டால் மோசமே வருகுந் தானே."

- பாலவாகடம்

Fever, excessive thirst and accumulation of fluid in the skull and oliguria are present. When mixing of Abanan with faeces in the moolatharam, produces swelling of the body, the body become feverish, the eyes become pale, lips become colourless with fissures, head ache,

loss of energy, puffiness of the face and loss of appetite with feeling of body heaviness are the symptoms of vatha sobai. With the increased temperature, the baby becomes emaciated and onset of dysentry, finally leading to fatal consequences.

**பித்த சோபை:**

"……

செடமது பித்த நீரால் தெளித்ததால் தேக மெங்கும்
கடமது கணக்க வூதிக் கண்ணுமே வெளுக்குந் தானே

வெளுத்திடு மிரண்டாண் டானால் வினையழ சூழக்கேளாய்
களைத்திடு சடலந் தன்னில் கனலதால் வறட்சி காணும்
பழுத்திடுந் தேகமுதிப் பாண்டு காமாலை போலாம்
கொளுத்திடு குடங்கள் போலக் குறிவயிறு பெருகுந்தானே

வயிறது பெருகிற் றேதான் வற்றிடுங் கால்கள் கையும்
தயிரது போலேபேதி தனித்தடிக் கடிக்குப் பாயும்
துயரமே யதிகமாகும் துவண்டிடு மசதி காணும்
பயறது போலே புண்கள் படருங்கா மாலையாமே."

- பால வாகடம்.

In Pitha sobai the baby has excess bile secretion, swelling of the body and pale eyes. At the age of two years the baby will be emaciated, bloated and have dryness of the body with paleness and jaundice. The baby becomes potbelly with muscle wasting in the limbs, curd like diarrhea, excessive fatigue and grains like eruptions over the body will follow.

## 2. According to Theraiyar Vaagadam:

**அ. சுரசோபை:**

"நெஞ்சுவற்று முடம்பெரிக்கும் நேயமுடனே தவனமுமாம்
பஞ்சு போல விழிபரந்து பகரு முன்னே சுரமுண்டாம்
நஞ்சாமமிர்த மானதெல்லாம் நடக்குங்கைகா லெரிவெடுக்கும்
துஞ்சா மொழியீர் மடமானே துய்ய சோபைச் சுரமிதுவே"

- தேரன் வாகடம் (பாடல் - 376, பக்கம் - 109)

Dryness of the chest, burning sensation over the body, eager to drink cold water, paleness of the eyes, fever and burning sensation of the limbs are present in Sura sobai.

**ஆ. வறள் சோபை:**

"உடம்பது வெளுக்குமாகி லுறுதிகெட் டுதிரம் வற்றும்
விடமது போலவேறி மேனியும் வெளுத் ததைக்கும்
இடம்படக் காலுங்கையு மிழுத்துடன் கடுத்து நிற்கும்
வடமதே யொத்தமானே வறள் சோபையின் குணமிதாமே"

- தேரன் வாகடம் (பாடல் - 377, பக்கம் - 109)

Paleness of the skin, anaemia, anasarca and puffiness of the face are seen in Varal sobai.

**இ. ஊது சோபை:**

"மெத்த வுடம்பு மிகவூதும் வெளுக்குங் கைகாலப் படியே
நத்தஞ் சுண்டிப் பசுநிறமாம் நல்லநயன மஞ்சளிக்கும்
பித்தங் கூடிக் குளிருண்டாய் பெருத்துமிகவே யடர்ந்துவரும்
நித்தம் புதைக்குங் குணமானே அறிகானூது சோபையிதே".

- தேரன் வாகடம் (பாடல் - 378, பக்கம் - 109)

Anasarca, paleness of the body, yellowish discolouration of the eyes and anaemia are seen in Oodhu sobai.

**3. On the basis of (Yugi Chinthamani):**

**a. Vatha Sobai:**

"சோபைதான் வருமுன்னே உடல்தான் வற்றும்
சுகநரம்பு தான்வெளுக்கும் சீரண மாகும்
தூபைதான் பெலஷயமாய் நடுக்க லாகுஞ்
சுரமோடுமிக வெளுப்பு மிளைப்பு மாகும்
மாபைதான் மயிர்முனைகள் சிவந்து போகும்
மகத்தான நித்திரையு மந்த மாகும்
சோபைதான் அங்குலிலே சடமெங் குந்தான்
கொடுவலியாம் வாதத்தின் சோபை யாமே."

- யூகி சிந்தாமணி (பாடல் - 548, பக்கம் - 176)

The body becomes emaciated with the onset of sobai, paleness of the body and indigestion occurs. The strength of the body decreases. Dyspnoea and insomnia are present. The body becomes edematous day by day.

**b. Pitha sobai:**

"வலியாக மயிர்மஞ்ச னித்தி ருக்கும்
மகத்தான சயித்தியமே மிகவி ரும்பும்
தலியாகத் தாபமொடு இளைப்பு காணும்
சரீரந்தான் மிகச்சிவப்பாந் தலைவ லிக்கும்
புலியாக விருந்ததுபோய்ப் பெலவீ னத்தால்
புகலரிய மயக்கமொடு வியர்வை யாகும்
நலியாகக் கண்புருவ மூக்குத் தண்டு
நலங்குமே பித்தத்தின் சோபை தானே"

- யூகி சிந்தாமணி (பாடல் - 549, பக்கம் - 177)

In pitha sobai, the body, eyes, eyebrow, nose and hair become yellow, Vomiting, excessive thirst, fatigue, dyspnoea and head ache are present. The strength of the body decreases and unable to walk. In addition dizziness, sweating and chillness are present.

**c. Kaba Sobai:**

"நலங்குமே வடிவெல்லாந் தினவுண் டாகும்
நல்லமயிர்க் கால் வெளுப்பு உடல்வெ ளுப்பு
திலங்குமே தேகமெங்குஞ் சரச ரப்பு
திடுக்கியே மிகக் குளிரும் நித்திரை யில்லை
விலங்குமே விழியனலாங் குரல்நெரி வாகும்
விசூழியாய்ப் பேதி தலை கிறுகி றுப்பு
சிலங்குமே ரத்தங்கள் சுரந்து வீங்கும்.
சிலேட்டுமத்தின் சோபையென்றே செப்ப லாமே"

- யூகி சிந்தாமணி (பாடல் - 550, பக்கம் - 177)

In kaba sobai, itching all over the body, paleness of the body, fever with chills, insomnia, irritation in the eyes, hoarseness of the voice, frequent diarrhea such as cholera, dizziness and edema are present. The edema increases day by day.

**d. Mukkutra Sobai:**

"செப்பவே மெல்லியர்மேல் மிகுந்த கோபம்
செடம்வீக்க முபாதியுமாய்ச் சுரமுண் டாகும்
அப்பவே அதிசாரம் வயிற்க டுப்பு
ஆசனத்தில் மிகக்கடுப்பு அசனஞ் செல்லா

நடப்பவே கால்கையுந் துண்டு காணும்

நடக்கவே பெருமூச்சாய்க் கிறுகி றுக்கும்

திப்பவே உமிழ்நீர்தான் மிகவே ஊறும்

திரிதோச சோபைசாத் தியமாய்ச் சொல்லே".

- யூகி சிந்தாமணி (பாடல் - 551, பக்கம் - 177)

In mukkutra sobai edema, fever, diarrhea, tenesmus, irritation in the anus, anorexia, weakness of the limbs, dyspnoea on exertion, dizziness and excessive salivary secretion are present.

**4. According to Jeeva Raksamirtham (Page No: 185 – 187), Anubava Vaithiya Devaragasiam (Page No: 147)** and **Roga Nirnaya saaram (Page No: 90)**

**a. Vatha sobai:**

The pain decreases at night and increases in day time. The hair becomes rigid, tremor, feels like crawling of ant in the body; excessive sleepiness and alternate in mood are present. The swelling appears and disappears rapidly. Indigestion, fever and fatigue are also present.

**b. Pitha Sobai:**

Desires in the cool foods, sometimes sweating, bramai, unmatham are present. The swelling first appears at the centre of the back and will disappear easily. Cough, irritation, dyspnoea, head ache, dizziness, change in colour of the eyes, eyebrows and nose are the associated symptoms.

**c. Kaba Sobai:**

The body becomes pale, chill, shining and dyspnoea are present. Itching all over the body, nausea, vomiting and excessive sleepiness are also present. The swelling becomes all over the body. Prognosis is bad.

**d. Vatha Pitha sobai:**

The symptoms of vatha sobai and pitha sobai occur at the same time.

**e. Vatha kaba sobai:**

The symptoms of vatha sobai and kaba sobai occur at the same time.

**f. Kaba pitha sobai:**

The symptoms of kaba sobai and pitha sobai occur at the same time.

**g. Mukkutra sobai:**

The symptoms of vatha sobai, pitha sobai, and kaba sobai are present at the same time. The associated symptoms are fever with edema, tenesmus, anorexia, weakness of the limbs, dyspnoea on exertion and excessive salivary secretion.

**h. Abikatha sobai:**

This is due to weapon injury, chill weather, walks opposite to the direction of the wind, intake of impure Semecarpus anacardium (சேராங்கொட்டை) sulphur (கந்தகம்) and mercury (இரசம்) and thorn prick.

**i. Vida sobai:**

Contact with the poisonous creatures, touch the urine of the poisonous animals, touch the nails of non poisonous animals, weaning the wet dresses and inhalation of the air from the poisonous trees like semecarpus anacardium, produce vida sobai due to irritation.

5. "ஊதிடு முடம்பு காயு முடற்குலை கருகியாங்கே
வேதினை மிகவே யுண்டாய் வெந்திடும் வாயுநாவும்
தீதினை யூதுரோகஞ் செய்குண மிவையே யென்ப
……."

- பரராச சேகரம் (பாடல், பக்கம் - 68)

According to this verse, the symptoms of sobai are swelling and dryness of the body, excessive irritability and oral ulcers.

6. "சோகையி னிலக்கணங் கேள்
சோர்வு கைகால் கட்குண்டாம்
சோறு வேண்டாமை தூக்கம்
சோலி போலண்டம் வீங்கும்
சோதினி யெனக் காதாகும்
சோங்கடர் காகமாங் கண்
சோம்பலுக் குறையுளா மெய்
சோணித் மெங்கே போமோ
சோத்திரங் கவியை யொப்பச்
சோலி செய்யிந்த நோய்க்கு
சோகை யென்றொரு ரோம்"

- தேரன் கரிசல்

According to **Theran Karisal**, the symptoms of sobai are,

- Anorexia
- Weakness of the limbs
- Edema
- Scrotal swelling like a bag
- Thinning of the ear lobes like a monkey
- Partial squint of eyes like a crow
- Dyspnoea, cough, dizziness and dimness of vision occur
- Constipation alternate with diarrhea, suppression of urine will also occur.

7. **"தாகமுறும் பசி தணிந்து கைகா லோயுஞ்**
**சண்டாள குணங்கள் செய்யும் சோகை தானே"**

**- அகத்தியர் குருநாடி**

According to this, the symptoms of sobai are,

- Thirst
- Anorexia
- Fatigue

**THRIDHOSHA THEORY**

In Siddha System, the manifestations of all diseases are the result of derangement of three dhoshas i.e. VAATHA, PITHTHA and KABHA.

According to the theory of siddhars, the human body is composed of 96 THATHUS including Panchapoothams and Thridhosha. The siddha

system of medicine is based on the Thridhosha theory. This includes the three humours, they are Vaatha, Piththa and Kabha. These three humors are primarily and essential constitutional factors of the human body. These factors exist in 1: 1/2 : 1/4 ratio respectively in the normal body. This normal existence is responsible for the proper functioning of the body. Any alteration in the above ratio can cause disease in the body like Vaatha disease, Piththa disease and Kabha disease.

**VAATHA: (VAYU)**

Vayu is classified into ten types according to its origin and function.

**1. PRAANAN:**

This is located in heart and lungs to nose. Its functions are controls mind and five objects of sense, useful for breathing, expectoration, coughing and sneezing.

**2. ABAANAN:**

It is located in lower abdomen and extremities. Its functions are responsible for passing urine, stools, sperm, menstrual flow and fetus. And also responsible for the proper mobilization of digestive extracts.In Sobai, abanan is affected. Diarrhoea present.

**3. SAMAANAN:**

It is located in the stomach. It is responsible for proper digestion, and distributes the digestive extract to all parts of the body.In Sobai, Samanan is affected. Loss of appetite is present.

**4. VIYAANAN:**

It is located mainly in the heart. Its functions are responsible for movements of all parts of the body. In Sobai, Viyanan is affected. Swelling of the body, pallor of eyes is present.

**5. UTHAANAN:**

It is located in the chest. Its functions are responsible for speech and also for complexion, mental strength and hard work.

**6. NAAGAN:**

It is located in the eyes. It is responsible for opening and closing of the eyes.

**7. KOORMAN:**

It is located in heart and eyes. It is responsible for vision and yawning and also for lacrimation.

**8. KIRUKARAN:**

It is located in the tongue. It is responsible for salivation, nasal secretion, appetite and also for sneezing and cough. Kirukaran is affected in SOBAI. Loss of appetite is present.

**9. THEVATHATHAN:**

It is located in rectum and genitalia. It is responsible for laziness, sleep and anger.

**10. THANANJEYAN:**

It is located in nose. It is responsible for swelling of the body, makes noise in the ear, separate the suture of the skull after death.

**PITHTHA:**

Piththa represents “Theyu”. It is classified into 5 types.

**1. ANALAM:**

This gives appetite and responsible for the change of liquid state into solid state of food substances and for proper digestion.In Sobai, analam is affected. Loss of affected.

**2. RANJAGAM:**

Converts the food extracts into blood and gives red colour to blood. It is also stimulating the synthesis of blood.In Sobai, Ranjagam is affected.

**3. SAATHAGAM:**

It is situated in the heart and determines its work according to mind knowledge and devotion.

**4. AALOSAGAM:**

This is responsible for vision and brightens the eyes.

**5. PIRASAGAM:**

Gives complexion and brightness to the skin. In SOBAI Pirasagam is affected due to pallor of the body.

**KABHA:**

Kabha is divided into 5 types.

**1. AVALAMBAGAM:**

It is located in the lungs. It is named "Avalambagam", because it is being the co-ordination of other four types of kabha.

**2. KILETHAM:**

It is located in the tongue and makes the food moist and soft.In Sobai, Kiletham is affected. Loss of appetite.

**3. POTHAGAM:**

It is located in the tongue and responsible for the sensation of taste.

**4. THARPAGAM:**

Situated in the head and responsible for the coolness of eyes.

**5. SANTHIGAM:**

Situated in the joints and responsible for the lubrication and free movements of the joints.

**Combination of five elements in Thridhosha:**

| | | |
|---|---|---|
| Vaatha | - | Vali + Vinn |
| Piththa | - | Thee |
| Kabha | - | Mann + Neer |

**TASTE**

Taste involved in the development of disease, and also in treatment.

**The five elemental combinations of tastes:**

| | | |
|---|---|---|
| Sweet | - | Mann + Neer |
| Sour | - | Mann + Thee |
| Salt | - | Neer + Thee |
| Bitter | - | Vali + Veli |
| Pungent | - | Vali + Thee |
| Astringent | - | Mann + Vali |

**UDAL KATTUGAL:**

Our body consists of seven Udal Kattugal. They are,

**1. SAARAM:**

It is the final product of the digestive process, which strengthens the body and mind and nourishes the blood.In Sobai, Laziness and tiredness are present.

**2. SENNEER:**

The saaram after absorption is converted into senneer. It is responsible for knowledge, strength, boldness and healthy complexion. Imparts colour to body and nourishes the muscles.In Sobai,pallor of skin,conjuctiva and lips are present.

**3. OON:**

The musculature will give structure and shape of the body. The well built or thin built is due to the muscle formations.

**4. KOZHUPPU:**

Lubricates the organs and thus facilitates their functions and maintains oily matter of the body.

**5. ENBU:**

Forms the basic skeletal structure of the body. Responsible for locomotion and protection of vital organs.

**6. MOOLAI:**

Present inside the bones which strengthen and maintain the normal conditions of the bone.

**7. SUCKILAM (OR) SURONITHAM:**

Responsible for the propagation of species.

**PARUVAKAALAM (Season)**

The whole year is constructed by 6 seasons as perumpozhuthu. They are known as.

1. Karkaalam - Auvani and Purattasi - August and September.
2. Koothirkaalam - Iyppasi and Karthigai - October and November.
3. Munpanikaalam - Markazhi and Thai - December and January.
4. Pinpanikaalam - Masi and Panguni - February and March.
5. Elavenilkaalam - Chithirai and Vaigasi - April and May.
6. Mudhuvenil Kaalam - Aani and Aadi - June and July.

The Sirupozhuthu, the minor classifications of time of a day has been divided into Vaikarai, Kalai, Munpagal, Pinpagal, Maalai, Iravu and Yaamam.

The diseases were triggered in a specific time period of a season and of a day. The siddhars have been anticipated the seasonal changes and advised certain measures in the name of "Kaala Ozhukam" to avoid the onset of such ailments.

## NILAM

It is divided into 5 types

| S. No. | Nilam | Areas |
|---|---|---|
| 1. | Kurinji | Hill regions and surroundings |
| 2. | Mullai | Forest regions and surroundings |
| 3. | Marutham | Cultivating regions and surroundings |
| 4. | Neithal | Coastal regions and surroundings |
| 5. | Palai | Desert regions |

According to Siddha texts, the peoples who live in Kurinji, Neithal and Palai nilam acquire kaba diseases. So they have increased chance to get SOBAI NOI, as it is a KABHA disease.

### MUKKUTRA VERUPADUGAL(PATHOLOGY)

"கபமான நீரதுவுமின்றிச் சோபை வராது"

- தேரையர்

According to this, oedema occurs due to vitiation of kabam. Blood is vitiated in its nourishing content and the vitiation of kabam leads to oedema of the body. It also conduces to unhealthy swelling of the body with water logging.

Corollary to the above vitiation the Abanan responsible for defaecation is disturbed resulting in diarrhea. Besides the vitiated Viyanan disturbs the circulation of the blood and results in disorders of mukkutram.

**PINIYARI MURAIMAI (OR) ENVAGAI THERVUGAL (Diagnosis)**

Piniyari muraimai is the method of diagnosing the disease. It is based upon the following principles. They are,

1. Poriyaalarithal.
2. Pulanaltherthal
3. Vinaadhal.

**1. Poriyaalarithal:**

Pori is the five organs of Perception. They are nose, tongue, eyes, ears and skin. Poriyalarithal is examining the pori of the patient by the Physician.

**2. Pulanaltherthal:**

Pulan is the five object of sense namely smell, taste, sight, sensation and sound. Pulanaltherthal is the examination of the pulan of the patient by the physician.

**3. Vinaadhal:**

By Interrogation the physician knows about the patients name, age occupation, native place, socio-economic status, family history, diet habits, prone for any allergens, period of illness, history of previous episode, frequency of attacks by change of season, relevant history of treatment and habits etc.

**Envagai Thervugal (OR) Piniyari Muraimai.**

Envagai Thervugal is the siddhars diagnostic methods. This is described as,

"நாடிப்பரிசம் நாநிறம் மொழிவிழி
மலம் மூத்திரமிவை மருத்துவராயுதம்"

- நோய்நாடல் நோய்முதனாடல் திரட்டு - பாகம் I

"தரணியுள்ள வியாதி தன்னை யட்டாங்கத்தால்
தானறிய வேண்டுவது யேதோ வென்னில்
திரணியதோர் நாடி கண்கள் சத்தத்தோடு
தேகத்தினது பரிசம் வருணம் நாக்கு
யிரணமல மூத்திரமா மிவைக ளெட்டும்
யுதம்படவே தான் பார்த்துக் குறிப்புக்கண்டு
புரனருளால் பெரியோர்கள் பாதம் போற்றிப்
பண்பு தவறாமல் பண்டிதற் செய்வீரே"

- குணவாகட நாடி

**Envagai thervugal are,**

1. Naa
2. Niram
3. Mozhi
4. Vizhi
5. Sparisam
6. Malam
7. Moothiram
8. Naadi

**1. Naa (Tongue)**

The tongue is the organ of taste and speech. We perceive taste, through the tongue when it is wet. Dry tongue cannot perceive taste.The tongue is also the vital organ of speech, used to convey in words, the thoughts, concepts, ideas and feelings. Examination of this important organ reveals the totality of what is happening in the body.

Look the patients tongue, observe the size, shape, surface, margins and colour.As there is loss of appetite and anaemia, coated tongue and pallor are found out in Sobai.

**2. Niram (Colour of the skin)**

Colour indicating Vaatha, Piththa, Kabha and Tridhosas, yellow or pallor or black or redness of the skin, any bluish discolouration of the face, conjunctiva and nail beds.In Sobai, pallor of skin, conjuctiva and lips are noted.

**3. Mozhi (Voice)**

Clarity of speech (or) any disturbances, loud voice, slurring, crying, talk induced by hallucination, breathlessness can be made out. Different respiratory sound and abnormal sounds are also observed.

**4. Vizhi (Eye)**

Any abnormal change of colour, shape of eye, size of the pupil, lacrimation, bleeding, eyelashes and eyebrows must be noted. In Sobai, pallor of conjuctiva is noted.

**5. Sparisam**

Dryness of the body, temperature state of the body, sweating, malnutrition, any palpable mass, tenderness, touch sensation, roughness of the skin, ulcer, emaciation and oedema are noted.In Sobai, dryness of skin is present.

**6. Malam (Faeces)**

Quantity, colour, odour, froth, consistency including indigestion, blood stained, mucus content, frequency, constipation etc.In Sobai, diarrhea is present.s

**7. Moothiram**

Quantity, colour, froth, frequency, retention, deposit, heaviness, presence of abnormal constituents like albumin, sugar and deposits etc.

**8. Naadi**

The three 'Uyir thathukkal' are formed by the combination of three Naadi with three Vayu.

| | | | |
|---|---|---|---|
| Idakalai | + Abanan | - | Vatham |
| Pingalai | + Piranan | - | Pitham |
| Suzhumunai | + Samanan | - | Kabam |

Naadi can be felt one inch below the wrist on the radial side by means of palpation with tips of index, middle and ring fingers. The verse is as follows,

"கரிமுகனடியை வாழ்த்திக் கைதனில் நாடி பார்க்கில்
பெருவிரலங் குலத்தில் பிடித்தடி நடுவே தொட்டால்
ஒரு விரலோடில் வாதமுயர் நடுவிரலிற் பித்தம்
திருவிரல் மூன்றிலோடில் சேத்தும நாடிதானே"

- நோய் நாடல் முதல் பாகம்

But it is stated in sathaga Nadi that the correct Naadi for children cannot be felt.

The verse is as follows,

"கொண்டிடவே கயரோகி காசரோகி
குறிப்பாக சிற்றின்பம் செய்த பேர்கள்
அண்டிடவே தரித்திரர்கள் விருத்தர் பாலர்
அன்பாகத் தண்ணீரில் மூழ்கினோர்கள்ள
கொண்டிடவே இவர்களது உறுப்பின் தாது
கூறவே முடியாது எவர்க்குக் இட்டும்
பண்டிடவே யிப்பரீட்சை யார்தான் காண்பார்
பராபரத்தின் மகிமையிது பாருபாரே"

- நோய் நாடல் முதல் பாகம்.

In Sobai noi, most of the cases have kaba pitha naadi.Some of the cases have pitha kabam also.

**NEERKURI AND NEIKURI**

Based upon the clinical features of a disease and Naadi, the diagnosis is further confirmed by the support of Neerkuri and Neikuri

"அருந்துமா றிரதமும் அவிரோதமதாய்
அ.ச்கல் அலர்தல் அகாலவூண் தவிர்ந்தழற்
குற்றளவருந்தி உறங்கி வைகறை
ஆடிக்கலசத் தாவியே காது பெய்
தொரு முகூர்த்தக் கலைக்குட்படு நீரின்
நிறக்குறி நெய்க்குறி நிருமித்தல் கடனே"

- சித்த மருத்துவாங்கச் சுருக்கம்

The patient must take well-cooked food in the previous day. The intake must be proportionate to the degree of his appetite. Food intake should be taken, at appropriate time. He must have sound sleep on the previous night. The urine is collected on the dawn of the next day in a glass container and closed immediately to prevent from the contact of external atmosphere. This specimen must be examined within 1 1/2 hours. This procedure should be followed strictly in order to get accurate reading of Neerkuri and Neikuri.

**NEIKURI:**

The diagnosis and prognosis of dhosha, derangement of the diseases are studied on the basis of the behaviour by drop of gingely oil on the surface of the urine kept in a wide vessel in the sunlight.

Methods for the determination of three dhosha's derangement by adding a drop of oil in the urine as follows.

"நிறக்குறிக் குரைத்த நிருமாண நீரிற்
சிறக்க வெண்ணெயோர் சிறுதுளி நடுவிடுத்
தென்றுறத் திறந்ததொலி யேகா தமைந்ததி
னின்ற திவலைபோம் நெறிவிழியறிவும்
ஒன்றது புகலுஞ் செய்தியை யுணரே".

- நோய்நாடல் நோய்முதல்நாடல் - பாகம் 1

**The process of oil indication:**

The urine specimen is collected and analysed as follows.

The specimen is kept in a glass dish, well exposed to sunlight. It should not be disturbed by the wind. Then add one drop of gingely oil by a glass rod. Observe keenly about the position and spreading of the oil drop.

"அரவென நீண்டின.்தே வாதம்"
"ஆழிபோற் பரவின் அ.்தே பித்தம்"
"முத்தொத்து நிற்கின் மொழிவதென் கபமே"

If a drop of oil spreads likes a snake it indicates the Vaatha disease, it spreads like a ring it indicates Pitha disease, and it spreads like a pearl it indicates Kabha disease. In Sobai, oil looks like a pearl and indicates kabha neer.

# THODAR NOIGAL (COMPLICATIONS)

## SOBAI MAHOTHARAM

"கூறான அடிவயிறு குழைந்து உப்பிக்
கூப்பிட்டு மேல் வயிற்றில் பிகுவு மாகும்
தேறான வண்ட மொடுக் கால்கள் கைகள்
சிதைந்துமெத்த வீங்கியே செழும்ப லாகும்
வீறான மேல் மூச்சு இருமல் தாகம்
விக்கியே சரீரமெல்லாங் குளிர்ச்சி யாகும்
நூறான மூத்ர மலஞ் சுருங்கிக் காணும்
சோபை மகோ தரமென்று செப்ப லாமே"

- யூகி சிந்தாமணி ( பாடல் - 583 , பக்கம் - 188)

The following symptoms are seen in "Sobai Mahotharam".

- ❖ Distension of the abdomen
- ❖ Pain in the upper abdomen
- ❖ Swelling in both limbs
- ❖ Dyspnoea
- ❖ Cough and excessive thirst
- ❖ Hypothermia
- ❖ Constipation and oliguria.

## FATE OF THE DISEASE(NOI MUDIVU)

1. "துடரான பித்தமதிற் சோபை யாகா
சோபையிலே வாயு வெழுந்து தொந்திப்பாகா
இடரான வாயுவதிலே பாண்டு வாகா
வெளிற் பாண்டுதனில் வயிற்றுக் கடுப்புமாகா

திடமான கடுப்பதிலே சீத மாகா

சீதமதி லெழுந்து கபஞ் சேரலாகா

தடமான கபந்தனிலே மயக்கம் விக்கல்

தரித்திடுகில் மரணமென்று தயவாய்ச் சொல்லே”

- சதக நாடி .

2. “சொல்லு பித்தத்திற் சோபைதனில் வாயு தொந்தம்

வல்ல வதிற் பாண்டுவன் பாண்டில் - நல்ல

வயிற்றுக் கடுப்பு வளர்கடுப்பிற் சீதம்

பயிலிற் கெடுதியெனப் பன்

சீதந்தனிற் கபமுஞ்சேர் கபத்தில் விக்கலுட

னோது மயக்கமிவை யுற்றினு - மாதேகேள்

கோதுதனை நீக்கிக் கூறுலகோர் தாம்போற்றத்

தீதுலகு புகுந்தேர்”

- கண்ணுச்சாமியம் .

In pitha sobai, vaayu, anaemia, dysentery, kabam, faintness and hiccough like symptoms are followed in order, will lead to death.

## PROGNOSIS OF SOBAI (NOI NITHANAM)

**Curable type:**

**According to Jeeva Rakshamirtham, if oedema alone without** any associated disorders will have good prognosis.

**Incurable type:**

According to **Jeeva Rakshamirtham** and **Siddha Maruthuvam** , the following types are incurable.

1. Mukkutra sobai
2. If the swelling subsides, but recurs again and again, the condition of the affected person is incurable.
3. If the body is swollen and the skin cracks with oozing out of the fluid, the condition of the affected person is incurable.
4. If the swelling of the body subsides suddenly, chillness of the nasal septum, excessive vomiting and diarrhea, flatulence and swelling of the back are the symptoms, which tell us the affected is beyond the cure.
5. In addition to this, if the swelling spreads from foot to face, it is known as “Earu Veekam” and from the face to foot is known as “Erangu Veekam”. Earu veekam is incurable.

## NOI NEEKAM(TREATMENT)

Treatment is of two kinds,

1. Restoration of balance of Mukkutram and Udal kattugal.
2. Internal medicine: Administration of medicine should be accompanied with the vehicle (அனுபானம்), adjuvant (துணைமருந்து), and diet( பத்தியம்).

**Treatment of sobai:**

1. Rejuvenation of the blood.
2. Excess fluid has to be removed out by the administration of diuretics.
3. Intake of rich nutritious food is also an important part of the treatment.
4. Supports with iron supplements for nourish the blood.

**Diet:**

**"உணவே மருந்து**

**மருந்தே உணவு"**

Diet should strengthen the body and rejuvenate the blood. It must also be contribute to increase the urination. They are twice cooked rice for easy digestion and dishes made up of radish, greens, snake gourd and tender brinjal. Soup prepared from the liver of a goat may be given to rejuvenate the blood and strengthen the body.

Greens like Karisalai, Murungai, Ponnanganni, Arukeerai, Sirukeerai and Manathakkali keerai should be given.

High calorie foods prepared from cereals, pulses and nuts like groundnut and fruits like amla and papaya should be given.

Hen's egg, ghee and butter like foods of animal sources are the main energy supplements for children.

After normal diet is restored, meat of kaadai, gowthari and udumbu may be given to tone up the system debilited and for rejuvenation.

**Drug of choice:**

The author took Nelli Vadagam and Sobai kudineer as the trial drug for Sobai because herbal drugs are potent and safer than metallic drugs.

# MODERN ASPECT

# DROPSY

**Definition:**

It is defined as abnormal and excessive accumulation of fluid in the interstitial tissue spaces and serous cavities. The accumulation of fluid may be inside or outside the cell.

Based on the site of accumulation of fluid, edema is classified into two types.

1. Intracellular edema – Fluid accumulates inside the cell.
2. Extracellular edema – Fluid accumulates outside the cell.

Intracellular edema because of three reasons,

1. Malnutrition
2. Poor metabolism
3. Inflammation of the tissues

Extracellular edema occurs because of four reasons,

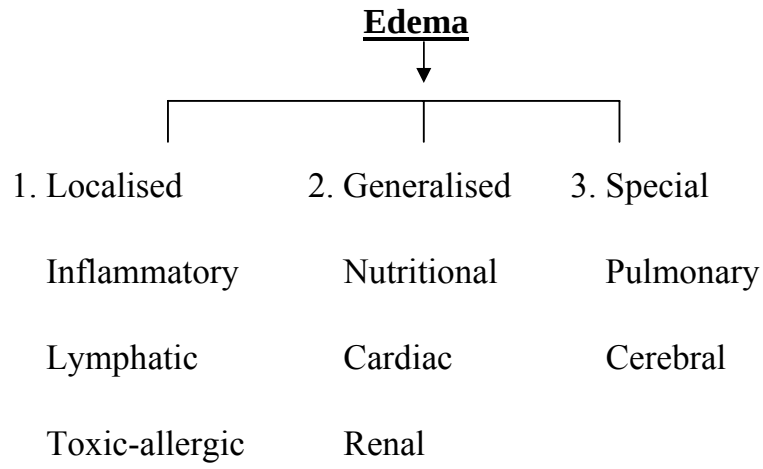
1. Heart failure
2. Renal disease
3. Decreased amount of Plasma proteins
4. Lymphatic obstruction

**Types:**

There are two main types of edema.

1. Localised edema – In the organ or limb.
2. Generalised edema-When it is systemic in distribution, particularly noticeable in the subcutaneous tissues.

The edema may be classified as follows.




Besides, there are a few special forms of edema. In the case of edema in the subcutaneous tissues, momentary pressure of finger produces a depression, known as *"Pitting edema"*. The other variety is *"Non-pitting edema"* or *"Solid edema"*, in which no pitting is produced on pressure.

**MECHANISM OF EDEMA**

**PHYSIOLOGY:**

The three major types of proteins in the plasma are albumin, globulin and fibrinogen.The principal function of albumin is to provide

colloid osmotic pressure. The globulin is mainly responsible for both the natural and acquired immunity. During blood coagulation, the fibrinogen polymerises into fibrin threads thereby forming blood clots to avoid the leaks in the circulatory system.

**Proteins:**

The three major types of proteins present in the plasma are albumin, globulin and fibrinogen. The principal function of albumin is to provide colloid osmotic pressure.

Albumin is responsible for the maintenance of plasma osmotic pressure. Osmotic pressure due to albumin is greater than globulin because of lower molecular weight and higher concentration. Osmotic pressure of plasma must be maintained for the proper distribution of water between blood and tissues.

**NORMAL FLUID PRESSURES**

**Osmotic Pressure:**

- This is the pressure exerted by the chemical constituents of the body fluids.

**Hydrostatic Pressure:**

This is the capillary blood pressure. There is a considerable pressure gradient at the two ends of capillary loop being higher at the arterial end *(average 32mm Hg)* than at the venous end *(average 12mm Hg).*

Tissue tension is the hydrostatic pressure of interstitial fluid and is lower than hydrostatic pressure in the capillary at the either end *(average 4mm Hg)*.

**Normal Fluid Exchange:**

At the arterial end of the capillary, the balance between the hydrostatic pressure *(32mm Hg)* and plasma osmotic pressure *(25mmHg)* is the hydrostatic pressure of 7 mmHg which is the outward driving force so that a small quantity of fluid and solutes leaves the vessel to enter the interstitial space.

At the venous end of the capillary, the balance between the hydrostatic pressure *(12mm Hg)* and plasma osmotic pressure *(25mm Hg)* is the osmotic pressure of 13 mm Hg. This is the inward driving force so that the fluid and solutes re-enters the plasma.

The tissue fluid left after exchange across the capillary wall escapes into the lymphatics from where it is finally drained into venous circulation.

Tissue factors i.e., osmotic pressure of interstitial fluid and tissue tension are normally small and insignificant forces opposing the plasma hydrostatic pressure and capillary hydrostatic pressure respectively.

**PATHOGENESIS OF EDEMA:**

The following six mechanisms may be operating singly or in combination to produce edema.

1. Decreased plasma oncotic pressure.
2. Increased capillary hydrostatic pressure.
3. Lymphatic obstruction.
4. Tissue factors (Increased oncotic pressure of interstitial fluid and decreased tissue tension)
5. Increased capillary permeability.
6. Sodium and water retention.

**1. Decreased Plasma oncotic pressure:**

The plasma oncotic pressure exerted by the total amount of plasma proteins tends to draw fluid into the vessels normally. A fall in the total plasma protein level *(hypoproteinemia less than 5 gm/dl)*, results in lowering of plasma oncotic pressure in a way that it can no longer counteract the effect of hydrostatic pressure of blood. This results in increased outward movement of fluid from the capillary wall and decreased inward movement of fluid from the interstitial space, causing edema.

Hypoproteinemia usually produces generalised edema out of various plasma proteins, albumin has four times higher plasma oncotic

pressure than globulin, so that it is hypoalbuminemia *(albumin below 2.5gm/dl)*, that results in edema more often.

**2. Increased capillary hydrostatic pressure:**

The hydrostatic pressure of the capillary is the force that normally tends to drive fluid through the capillary wall into the interstitial space by counteracting the force of plasma oncotic pressure. A rise in the hydrostatic pressure at the venular end of the capillary, which is normally low *(average 12mm Hg)* to a level more than the plasma oncotic pressure, results in minimal or no reabsorption of fluid at the venular end, consequently leading to edema.

**3. Lymphatic obstruction:**

Normally the interstitial fluid in the tissue spaces escapes by way of lymphatics, so that obstruction to outflow of these channels causes localised edema, known as lymphedema.

**4. Tissue factors:**

The forces acting in the interstitial space – oncotic pressure of the interstitial space and tissue tension are normally quite small and insignificant to counteract the effects of plasma oncotic pressure and capillary hydrostatic pressure respectively. However, in some situations, the tissue factors in combination with other mechanisms play a role in causation of edema.

**5. Increased capillary Permeability:**

An intact capillary endothelium is a semi permeable membrane which permits the free flow of water and crystalloids, but allows minimal passage of plasma proteins normally. However, when the capillary endothelium is injured by *"Capillary Poisons"* such as toxins and their products, histamine, anoxia, venoms, certain drugs and chemicals the capillary permeability to plasma proteins is enhanced due to development of gaps between the endothelial cells.

This, in turn, causes reduced plasma oncotic pressure and elevated oncotic pressure of interstitial fluid which consequently produces edema.

**6. Sodium and Water retention:**

Normally about 80% of sodium is reabsorbed by the proximal convoluted tubules under the influence of intrinsic renal mechanism. Excessive retention of sodium and water and their decreased renal excretion occur in response to hypovolaemia and lowered concentration of sodium in the renal tubules by stimulation of intrinsic renal and extra – renal mechanisms as well as via release of ADH.

## PATHOPHYSIOLOGIC CATEGORIES OF EDEMA

### I. Increased Hydrostatic Pressure

#### A. Impaired Venous Return:

1. Congestive heart failure
2. Constrictive pericarditis
3. Cirrhosis of liver (ascites)
4. Obstruction or Narrowing of Veins
    a. Thrombosis
    b. External pressure
    c. Inactivity of the lower extremities with long periods of dependency.

#### B. Arteriolar Dilatation:

1. Heat
2. Neurohumoral excess or deficit

### II. Reduced Oncotic Pressure of Plasma

**Hypoproteinemia**

A. Protein losing glomerulopathies – nephrotic syndrome

B. Cirrhosis of liver (ascites)

C. Malnutrition

D. Protein loosing gastro enteropathy.

**III. Sodium Retention**

A. Excessive salt intake with reduced renal function

B. Increased tubular reabsorption of sodium.

1. Reduced renal perfusion
2. Increased Renin – Angiotensin – Aldosterone secretion.

**IV. Lymphatic Obstruction**

A. Inflammatory

B. Neoplastic

C. Post surgical

D. Post irradiation

**INTRODUCTION TO NUTRITIONAL DROPSY**

Food is a major concern of the mankind beginning from the time of conception and extending through the entire life span of the individual. Nutrients are necessary for maintaining growth of the individual and for repair of the aging tissues.

The energy obtained from the food is usually expressed in terms of thermo chemical kilocalories. These are often loosely referred to as calories. The calorie is defined as the quantity of heat required to raise the temperature of 1 gm of water from 14.5°C to 15.5°C. A thermo chemical kilocalorie is equal to 1000 calories.

Protein is the second most abundant substance in the body, second only to water. These are made up to twenty different amino acids. A few amino acids can be adequately synthesized in the body (non essential),

while others must be supplied in the diet (essential or semiessential). *Essential amino acids* include *leucine, isoleucine, lysine, methionine, phenyl alanine, threonine, tryptophan* and *valine*.

**Functions of Protein:**

- Protein helps the child to grow, as the constituent amino acids are necessary for the synthesis of tissues in the body.
- Protein is essential for the formation of digestive juices, hormones, plasma proteins, enzymes, vitamins and haemoglobin etc.
- Protein is also act as powerful buffers to maintain acid base equilibrium in the body.
- It is also a source of energy for the body.
- Excess protein not used for building tissues or providing energy is converted by the liver into fat and stored in body tissues.

## PROTEIN QUALITY

A complete protein contains all of the essential amino acids in relatively the same amount as humans require for maintenance of good health and optimal growth. The proteins of animal origin generally have a higher content of essential amino acids. These are therefore classified as **"Biologically complete protein".** Proteins from vegetable sources are often **"Biologically incomplete"** as these usually lack one or more of the essential amino acids. Proteins of rice and potato are considered as good vegetable proteins.

A high quality protein should be complete as well as digestible. This is measured best by the biological value of protein. **Biological Value (BV)** is calculated as the fraction of absorbed nitrogen retained in the body for growth or maintenance.

Egg protein is considered a *Reference Protein* as it is complete and well digested. The *Biological value* of egg protein is 100. *Biological value* of milk, rice and fish are 75, 67 and 75 respectively. The combination of vegetable proteins may provide all the essential amino acids as in the reference protein.

**PROTEIN REQUIREMENT**

| Age | Protein gm / Kg / day of egg or milk Protein equivalent |
|---|---|
| 1 – 2 months | 2.25 |
| 2 – 3 months | 1.82 |
| 3 – 4 months | 1.47 |
| 4 – 5 months | 1.34 |
| 5 – 6 months | 1.30 |
| 6 – 9 months | 1.25 |
| 9 – 12 months | 1.15 |
| 1 – 2 years | 1.25 |
| 2 – 3 years | 1.13 |
| 3 – 4 years | 1.09 |
| 4 – 5 years | 1.06 |
| 5 – 6 years | 1.00 |
| 6 – 9 years | 1.48 |
| 10 – 12 years | 1.00 |

These protein requirements are given in terms of mixed vegetable protein, contained in the Indian diets, the **Net Protein Utilization (NPU)** of which is assumed to be 65. If the protein in the diet is obtained from animal sources like egg, meat, fish or milk, lower intake of protein will usually be sufficient.

The *NPU* of a protein is the proportion of ingested nitrogen that is retained in the body under specified conditions. *NPU* is a combined measure of digestibility and the efficiency of utilization of the absorbed amino acids.

**PROTEIN ENERGY MALNUTRITION (PEM)**

**PEM** is probably the most widespread health and nutritional problems of the developing countries including India. The calorie and protein requirements of young children are larger relative to their size than in older children and adults. Protein calorie deficiency is therefore seen more commonly among these groups and associated with infection contributes to high child mortality in under privileged communities. Further, early malnutrition can have lasting effects on growth and functional status.

The frequency of under nutrition cannot be easily estimated from the prevalence of commonly recognized clinical syndromes of malnutrition such as **"Marasmus"** and **"Kwashiorkar".** But the author would like to denote about "Kwashiorkar" as Sobai.

## ETIOLOGY

The deficiency may be primary or secondary in origin.

1. **Primary** - due to primary to dietary deficiency
2. **Secondary** - It is related to factors that interfere with the ingestion, absorption or utilization of nutrients.

In a considerable proportion of cases, both the factors may be operative.

## PRIMARY CASUES

### 1. Poverty:

Poor socio-economic status of the family contributes a lot to development of malnutrition in the developing regions. With very low income, it is a tough task to provide nutritious diet to the children. It is estimated that among the downtrodden, hardly 10% of the money is spent on foods obtained from animal sources i.e., egg, milk, curd, meat etc.

### 2. Ignorance, Faulty food habits, Feeding:

Many deep – rooted beliefs, customs, practices, superstions, food taboos and ignorance join hands to cause malnutrition.

### 3. Medical Causes:

Infections and disorders such as diarrhoea, malaria or measles may prove major contributory factors in development of malnutrition, indirectly or directly. Besides the deliberate restriction of food by the parents, child's intake may be reduced due to reduced appetite. At the

same time, there may result more catabolism to produce the heat energy lost during a febrile episode.

Intestinal parasitic may either deprive the host of nutrients or lead to malnutrition by reducing appetite, causing diarrhoea or by producing absorptive defect.

**4. Low birth weight (LBW):**

Malnourished mothers have a high incidence of low birth weight and growth retarded babies with poor nutritional reserve. The mothers may also show poor lactational performance.

**5. Large families:**

Nutritional status is adversely affected by the large size of the family. It has been convincingly demonstrated that malnutrition is much higher among children of birth order fourth and higher than in the first three children of a sibship. When there are too many children, the family has to do with whatever food it can manage. The burnt of the suffering falls on the preschool children and the mother.

**6. Social factors:**

Repeated pregnancies, inadequate child spacing, food taboos, broken homes and separation of a child from his parents are the important social factors that may play a part in etiology of PEM.

Natural disorders such as floods, earthquakes and droughts, shift the precarious nutritional balance towards the negative side.

**7. Population growth:**

Increase in the birth rate is disproportionate to the increase in food production. Countries with maximum population growth do not have improved agricultural production. This has lead to uneven distribution of food and malnutrition.

**8. Feeding habits:**

Lack of exclusive breast feeding for first 6 months makes the child prone to early onset malnutrition. Lack of confidence in the mother coupled with non – availability of the skilled help and social pressures make mother think that her breast milk supply is not sufficient to satisfy the nutritional needs of the infant.

Artificial feeding is employed in these situations, which is often disastrous for the baby because of the poor quality of the substitute milk, excessive dilution and use of unhygienic feeding bottles and nipples.

**SECONDARY CAUSES:**

Secondary nutritional inadequacy is caused by a variety of factors other than a poor diet. Factors that may be involved are as follows.

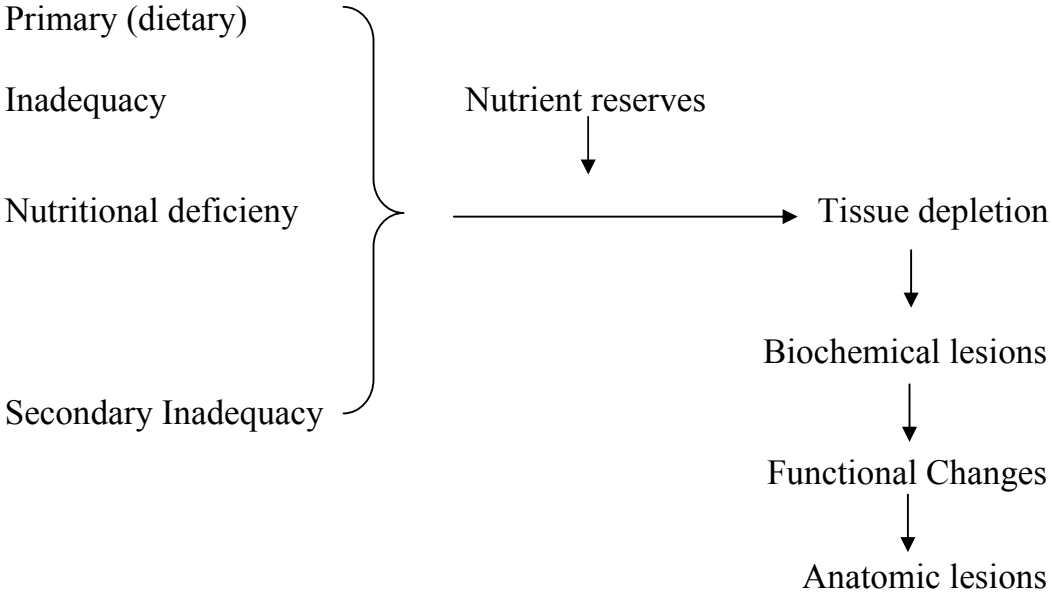
1. **Infection** - Like HIV.
2. **Metabolism** - Inborn errors of metabolism.
3. **Gastro intestinal tract** - Cleft lip, Cleft palate, Malabsorption, Gastro Esophageal Reflex Disease.

| | | |
|---|---|---|
| **4. Liver** | - | Cirrhosis, Chronic liver disease, Hepatitis. |
| **5. Pancreas** | - | Pancreatic insufficiency. |
| **6. Renal** | - | UTI, Chronic Renal Failure, Renal tubular Acidosis. |
| **7. Respiratory** | - | Asthma, Recurrent respiratory tract Infections. |
| **8. Endocrine** | - | Diabetes mellitus, Hypothyroidism, Addison's Disease, Growth hormone deficiency. |
| **9. Neurological** | - | Mental retardation, Degenerative diseases, Cerebral palsy. |

**10. Collagen vascular diseases**

**11. Malignancies**

**PATHOGENESIS OF NUTRITIONAL DEFICIENCY DISEASES:**




After a nutritional inadequacy begins, there is a time lapse before the onset of a Nutritional deficiency disease. The time intervel may depend on the degree of nutritional inadequacy and the level of nutrient reserves.

Biochemical lesions develop as a consequence of tissue depletion. Such lesions can best be illustrated by deficiencies of vitamins that are involved with enzyme systems dealing with the release of energy and other metabolic reactions. Biochemical alterations develop and may result in the accumulation of certain metabolites and in the altered metabolism of others.

Functional changes in tissues and organs may then occur. Anatomic lesions develop and often are specific for or related to the missing nutritional component or components. Although this sequence

has been presented in a step wise manner, no nutritional inadequacy to anatomic lesions need necessarily be complete before the next begins.

**Edema due to Malnutrition**

Malnutrition occurs because of poor intake of food or poor circulatory system through which the nutritive substances are supplied. Due to the lack of nutrition, the function of the cell membrane is depressed leading to poor exchange of ions. Especially the sodium ions leaking into the cells can not be pumped out. It causes endosmosis resulting in intracellular edema.

**Causes of edema in PEM:**

1. Hypoproteinemia – Hypoalbuminaemia
2. Increased ADH secretion
3. Increased Rennin, Angiotensin and Aldosterone secretion.
4. Decreased hepatic functions leads to hypoalbuminaemia and decreased degradation of Aldosterone, which leads to increased Aldosterone levels thereby retention of sodium and water.
5. Increased ferritin
6. Congestive heart failure
7. Anaemia

Nutritional marasmus and Kwashiorkor are two extreme forms of malnutrition. In marasmus there is no edema. Edema is one of the essential clinical features of Kwashiorkar.

## KWASHIORKAR

The term was more aptly interpreted to the sickness of the older child when the next baby is born. It was said to mean the "red boy", because of the characteristic pigmentary changes.

**CONDITIONS WHICH PRECIPITATE KWASHIORKOR:**

- Acute gastroenteritis
- Measles
- Whooping cough
- Tuberculosis
- Malaria
- Repeated lower respiratory tract infections
- Fever
- Increased dietary needs during rapid growth, illness, infections and anaemia.

**CLINICAL FEATURES OF KWASHIORKOR**

**Essential Features:**

I. Markedly retarded growth

II. Edema of dependent parts

III. Mental changes

**I. Growth retardation:**

Deficit in height is less than that in Marasmus. Muscles of the upper limbs are wasted, but the lower extremities appear swollen. Muscle wasting is masked by well preserved subcutaneous tissues and edema.

**II. Edema**

Edema is the clinical manifestation of expansion of extra cellular fluid volume caused by pre – renal diversion of fluid from the capillary bed to extra cellular space. Edema may be caused by,

1. Hypoalbuminemia
2. Retention of fluid and water due to increased capillary permeability as a result of infection; potassium deficiency being a major contributing factor.
3. Free radical induced damage to cell membrane.

Edema is characteristically pitting. It usually occurs initially above the ankles and is detected by pressing firmly over the lower third of the medial surface of the tibia, rarely puffiness of dorsum of the feet or round the eyes, occurs even earlier.

In later stage the whole face, hands and body may be edematous, but ascites is rarely due to kwashiorkor alone.

In a previously malnourished child, edema is precipitated by debilitating illness such as measles or diarrhoea. A child with edema may also be having severe dehydration concurrently.

**III. Mental Changes:**

With the onset of kwashiorkor, the previously peevish and irritable undernourished child becomes lethargic, listless and apathetic. He takes little interest in the environment and does not play with his toys. The kwashiorkor patient appears miserable, appetite is impaired and it is difficult to feed him orally.

**Other Usual Clinical Features**

**1. Hepatomegaly:**

The liver is enlarged with rounded lower margin and soft consistency in about one third of cases. Histological examination shows fatty infiltration.

**2. Hair Changes:**

The hair is turn, dry, brittle, easily pluckable, sparse and devoid of their normal sheen. It becomes straight and hypopigmented. The length of the hair that grows during the period of nurtitional deprivation appears reddish brown .During the phases of better nutrition, the growing part of the hair lets appropriately pigmented. This gives appearance of alternate bands of hypopigmented and normally pigmented hair **(Flag sign).** Hair changes are related more to the duration of under nutrition and are absent in acute *PEM*.

**3. Skin changes:**

Large areas of skin show erythema, followed by hyperpigmentation. Hyper pigmented patches may desquamate to expose raw hypopigmented skin. It gives appearance of old paint flaking off the surface of the woods (Flaky paint dermatosis). Lesions are more marked on extremities. The underlying raw skin is easily infected

The skin lesions are marked in body areas most exposed to continuous pressure and irritation. Petechiae or ecchymosis appear in severe cases. The skin may become dry, inelastic, mosaic in appearance. Follicular keratosis, sores and scabies may also be observed.

**4. Infections:**

These children often suffer from recurrent episodes of diarrhoea, respiratory and skin infections.

**5. Associated nutritional deficiencies:**

Nutritional deficiencies are generally multiple. Anaemia due to iron, protein, Vitamin $B_{12}$ or folate deficiency is often associated. Deficiencies of Vitamin B complex factors, especially ariboflavinosis are common. Keratomalacia due to Vitamin A deficiency is reported in 10 to 20 percent of pateints. The clinical evidence of florid rickets may not be so evident in a case of protein – energy malnutrition in whom growth has stopped, since ricket is a disease of growing bones.

**CHANGES IN BODY COMPOSITION**

The relative proportion of various organs, tissues and the chemical composition are different. There is a preferential loss of muscle and probably of cutaneous tissues which in the resting state have a low metabolic activity while essential organs with high rate of activity are relatively spared.

Brain weight is fairly well preserved in face of malnutrition. Muscle mass is severely compromised by reducing up to 70 percent. Body fat may be reduced up to 95 percent. Total bone mass is reduced with osteoporosis and delayed ossification.

**1. Fluid Considerations:**

Total body water in malnourished children is increased to 70 to 80% of body weight as compared to 60% in age matched well nourished controls. Activity of the sodium pump is reduced. Cell membranes become more permeable leading to increased intracellular sodium levels and reduced total body potassium and magnesium.

**2. Metabolic Alterations:**

BMR is reduced by 30%. Heat generation and heat losses are affected so that the child may behave like a poikilotherm. These factors predispose to hypothermia.

**3. Biochemical Changes:**

- Synthesis of all proteins is reduced.
- Capacity of the liver to take up, metabolise and excrete toxins is severely affected.
- Gluconeogenesis is impaired leading to increased risk of hypoglycaemia.
- Plasma transferrin concentration is markedly reduced. Plasma triglycerides, cholesterol and β – lipoproteins are reduced.
- VLDL account for most of the triglycerides.

**4. Renal:**

- Glomerular filtration rate and renal plasma flow are reduced in severe PEM.

- Capacity of kidneys to excrete excess of acid or water is greatly affected.

**5. Endocrine:**

- Insulin levels are reduced and the child has glucose intolerance.
- Cortisol and growth hormone levels are incresed.

**6. Cardiovascular System:**

- Cardiac output and stroke volume are reduced.
- Blood pressure is low and renal prefusion is compromised.

**7. Resistance to Infection:**

- The skin and mucosa do not offer effective physical barriers against infection.
- Impaired chemotaxis, phagocytosis and bactericidal capacity of leukocytes.
- The bacterial infections which require cell mediated responses for protection against them (e.g. tuberculosis) tend to be unusually severe in malnourished subjects.
- The thymus gland and thymus dependent lymphoid tissues are atrophied and cases of PEM cannot be sensitized easily by several antigens.
- Circulating immunoglobulin levels are usually normal or elevated in malnourished subjects.
- Acute phase immune response is diminished.

**8. Learning:**

- The period of active brain growth extends from 30$^{th}$ week of gestation of the human fetus to about the end of the second year of life. Undernutrition during early part of this period i.e. about first six months of life appears to adversely affect the development of the brain.
- Malnourished children may show poor intersensory organization among visual, haptic and kinesthetic sensations for recognition of geometric forms.

**9. Gastro intestinal Function:**

Salivary glands atrophy.

- The liver shows fatty infiltration
- Total absorptive surface is reduced.
- Steatorrhoea may occur.

**COMPLICATIONS**

1. Hypoglycaemia (Blood sugar < 54 mg / dl)
2. Hypothermia (Rectal temperature < 35.5°C)
3. Infections: Most common sites of localised infections are skin, gastrointestinal, respiratory and urinary tracts.
4. Septic Shock
5. Dehydration
6. Congestive Heart Failure
7. Electrolyte Imbalance
8. Deficiencies of Iron, Vitamins and other Micro Nutrients

## PREVENTION

### I. Prevention at family level:

a) Exclusive breast feeding of infants for first 6 months of life should be vigorously promoted and encouraged.

b) As much milk, meat, eggs or foods of high biological values, as the family can afford should be offered with the weaning food mixtures to enhance their net dietary protein value.

c) Iatrogenic restriction of feeding in fevers and diarrhoea.

d) Adequate time should be allowed between two pregnancies.

### II. Prevention at Community level:

a) *Early detection* is very important.

b) *Nutritional education* – People should be informed of the nutritional quality of various locally available and culturally accepted low cost food.

c) Vigorous promotion of *family planning programs* to limit family size.

d) *Income generation activities* – Training of rural youth and women in vocational skills so that they can supplement family income.

e) *Promotion of education* and *literacy* in the community especially non – formal education and functional literacy among village women.

f) *Technological measures* such as iodination of common salt, prevention of night blindness through periodic vitamin A supplementation.

**III. Prevention at national level:**

a) Nutritional supplementation

b) Nutritional surveillance

c) Nutritional planning

**DIETARY MANAGEMENT**

Dietary therapy is divided into initial feeding in the sick and anorexic child followed by energy dense dietary formulas before switching to home – based foods. Thus malnourished children need BEST dietary management.

B - Beginning of feeding

E - Energy dense feeding

S - Stimulation of emotional and sensorial Development

T - Transfer to home – based diets

**Beginning of feeding: (0-7 days)**

Start feeding after electrolyte water imbalance and infections are brought under control.

Milk based diets are most suitable at the beginning of treatment. If dried skimmed milk powder is used for reconstituting the milk, sugar and oil should be added to provide extra calories. The caloric intake

should not exceed 100kcal/kg/d on the first day. In a week's time this can be gradually increased to 150kcal/kg/day of energy and 2.38g/d of proteins. Total amount of fluids should be kept within 100 – 125 ml/kg/d.

**Energy Dense Feeding:**

Increase in the amount of calories by giving energy dense foods is required once the child is free of complications, shows signs of recovery and the appetite returns after initiation of dietary therapy. This helps the child to restore normal weight for height.

For optimum catch up growth of severely malnourished children, therapeutic diet should contain energy (150 – 220kcal/kg/day) and protein (4-5g/kg/d). The type of foods used during this phase should be energy dense. These foods can be prepared from mixture of cereal flour, pulses, oil or ghee and jaggery.

**Stimulation:**

Human contact and emotional support including tender loving care are important during this stage. Catch up growth in weight starts earlier than increase in height. However the rate of linear growth is 2 - 3 times than the normal rate of growth in an age matched normal child.

**Transfer to Home Based Diets:**

As the child will be ultimately managed at home, it is necessary that the child should be shifted to the adequate quantities of home based

diets. As a general rule, the diet prescribed for the child should be such, which the family can afford to provide for the baby within its limited income can be easily cooked at home, does not perish easily, is culturally acceptable and easily available in the local market.

**Balanced diet:**

Balanced diet is one, which consists of all the items of food like cereals, pulses, greens etc., in optimum proportion for that age and sex with reserve for stressful period. Taking into consideration the economic constraint, the following has to be kept in mind.

1. All items in optimum proportion with reserve for stressful period. The calorie derived from the carbohydrates, proteins and fat should be in the following prportions. *Carbohydrate* 60 – 70%, *Fat* 20 – 30% and *Protein* 10 – 15%.
2. Ratio of cereals protein to pulse protein to be 4:1.
3. The minimum level of leafy vegetables and other vegetables as suggested are not to exceed 150 gm / day for an adult and proportionately for children.
4. Minimum milk intake of 100 ml/ day.
5. Energy derived from refined sugar jaggery is to be kept around 5%.
6. Level of food items suggested should be consumed by the average child.

7. The food should contain all the six tastes in acceptable proportion.
8. Adequate water should be consumed. Too much water interferes with digestion. Too little water interferes with assimilation.
9. Take into account the economic constraints, should be affordable acceptable and available.
10. Milk is an important major item. The food should be given 5 -6 times per day. The green leafy vegetables will supply *vitamin* A, C and B *complex.* Cereals, pulses and oils provide the calories.

# MATERIALS AND METHODS

In this dissertation 20 cases SOBAI were treated in the In-Patient department of PG-IV Kuzhanthai Maruthuvam, Government Siddha Medical College, Palayamkottai.

Present study covered cases of male and female children of age group between 3-12 years. All the cases were carefully and thoroughly examined before admission. Severe and complicated cases were excluded, opinion of professor and lecturer was obtained and detailed history was recorded in the proforma of case sheet, attached in **Annexure IV.**

A Complete history of the patient was taken. Name, age, sex, hereditary factors and socio-economic status of the patient were noted. According to habits, patients who took the sand, mud, ash and sour taste food were also commonly affected by this disease. Hence the personal habits were enquired and noted.

Past history of the patient from infancy especially concerned with this disease was noted.

History of breast feeding, ante natal, natal and post natal history were taken.

Height, weight and mid arm circumference of the patients were noted.

Siddha diagnosis was made with the help of Mukkutram, Envagai Thervugal and Ezhu Udal Kattugal.

Modern Diagnostic methods were followed with the consultation of paediatric professor. The condition of liver, heart and spleen were studied.

The routine investigations were conducted in G.S.M.C. Hospital, Palayamkottai.

**Blood:**

TC, DC, ESR, Hb, PCV, MCV, MCH, MCHC.

**Urine:**

Albumin, Sugar and Deposits.

**Motion:**

Ova, Cyst and Occult blood.

To confirm the diagnosis of SOBAI, Plasma proteins and albumin, globulin ratio were investigated.

Bio chemical analysis of the trial drug was carried out in the Department of Biochemistry, Government Siddha Medical College, Palayamkottai.

Haematinic and diuretic action of the trial drug was tested in the Department of Pharmacology, Government Siddha Medical College, Palayamkottai.

The patients were treated with Nelli Vadagam with water as an anupanam twice a day after meals and Sobai Kudineer thrice a day.

At the time of discharge all the 20 patients were advised to take nutritious diet and to attend the out patient department for follow up study.

# OBSERVATION AND RESULTS

Results were observed with respect to the following criteria.

1. Sex reference
2. Age Reference
3. Kalam
4. Religion Reference
5. Economic status of the patient reference
6. Diet
7. Paruva kaalam
8. Distribution of Lands
9. Clinical features of Sobai
10. Tridhosha
11. Ezhu udarkattugal Reference
12. Envagai Thervugal Reference
13. Results after treatment Reference
14. IP Case Report
15. Investigation results
16. Investigation results
17. Anthropometry.

The observations recorded with the above said criteria were given in the tabular column form.

**Table 1: Sex Reference**

| S. No. | Sex | No. of cases | Percentage |
|---|---|---|---|
| 1. | Male children | 17 | 85% |
| 2. | Female Children | 3 | 15% |

Out of the 20 patients, 17 were male children and 3 were female children.

**Table 2: Age Reference**

| S. No. | Age | No. of cases | Percentage |
|---|---|---|---|
| 1. | 3-6years | 9 | 45% |
| 2. | 6-12 years | 11 | 55% |

The percentage was highest in the age group of 6 -12 years, the percentage was 55%, between the age group 3 – 6 years the percentage was 45%.

**Table 3: Kaalam**

| S. No. | Kaalam | No. of cases | Percentage |
|---|---|---|---|
| 1 | Vatham | 20 | 100% |
| 2. | Pitham | - | - |
| 3. | Kapham | - | - |

In this study, all the 20 patients were in Vatha Kaalam since all the patients belong to children age group.

**Table 4: Religion Reference**

| S. No. | Religion | No. of cases | Percentage |
|---|---|---|---|
| 1 | Hindu | 19 | 95% |
| 2. | Christian | 1 | 5% |
| 3. | Muslim | - | - |

Out of 20 cases 95% were Hindu, 5% were Christians.

**Table 5: Socio- Economic status of the patient**

| S. No. | Socio-Economic Status | No. of cases | Percentage |
|---|---|---|---|
| 1 | Poor | 15 | 75% |
| 2. | Middle | 5 | 25% |
| 3. | Rich | - | - |

Out of the 20 patients, 15 were in poor socio-economic status.

**Table 6: Diet Reference**

| S. No. | Diet Habit | No. of cases | Percentage |
|---|---|---|---|
| 1 | Vegetarian | 5 | 25% |
| 2. | Mixed diet | 15 | 75% |

Out of the 20 patients, 75% were Mixed diet, 25% were Vegetarians.

**Table 7: Paruva kaalam**

| S. No. | Paruva kaalam | No. of cases | Percentage |
|---|---|---|---|
| 1. | Kaar kaalam (Aavani& Purattasi) | 8 | 40% |
| 2. | Koothir kaalam (Iyppasi & Karthigai) | 6 | 30% |
| 3. | Munpani kaalam (Markazhi & Thai) | - | - |
| 4. | Pinpani kaalam (Maasi & Panguni) | - | - |
| 5. | Elavenil kaalam (Chithirai & Vaikasi) | 3 | 15% |
| 6. | Muthuvenil kaalam (Aani & Aadi) | 3 | 15% |

Under Paruvakalam, the highest incidence was noted in Kaar Kaalam (40%).

**Table 8: Distribution of Lands**

| S. No. | Thinai | No. of cases | Percentage |
|---|---|---|---|
| 1 | Kurunji (Hill) | - | - |
| 2. | Mullai (Forest) | - | - |
| 3. | Marutham (Fertile) | 18 | 90% |
| 4. | Neithal (Coastal) | 2 | 10% |
| 5. | Paalai (Desert) | - | - |

In 18 cases belonged to Marutham and 2 cases belonged to Neithal.

**Table 9: Clinical Features of SOBAI during Admission**

| S. No | Clinical features | No. of cases | Percentage |
|---|---|---|---|
| 1 | Edema of both the legs | 20 | 100% |
| 2. | Pallor of conjuctiva | 20 | 100% |
| 3. | Skin changes | 5 | 25% |
| 4. | Facial puffiness | 12 | 60% |
| 5. | Abdominal distension | 3 | 15% |
| 6. | Hair changes | 5 | 25% |
| 7. | Mental irritation | 4 | 20% |
| 8. | Angular stomatitis | 14 | 70% |
| 9. | Loss of appetite | 20 | 100% |
| 10. | Fever | 5 | 25% |
| 11. | Diarrhoea | 5 | 25% |

Among the 20 cases, 100% of the cases had Edema in both the legs, pallor of conjuctiva and loss of appetite. Angular stomatitis in 70% of cases, facial puffiness in 60% of cases, fever, diarrhea, hair changes, skin changes, mental irritation and abdominal distension were seen in 25%, 20% and 15% respectively.

**Table 10: Tridosha – a. Vatham**

| S. No. | Classification of Vaatha | No. of cases | Percentage |
|---|---|---|---|
| 1. | Pranan | - | - |
| 2. | Abaanan | 5 | 25% |
| 3. | Viyaanan | 20 | 100% |
| 4. | Uthaanan | - | - |
| 5. | Samaanan | 20 | 100% |
| 6. | Naagan | - | - |
| 7. | Koorman | - | - |
| 8. | Kirukaran | 20 | 100% |
| 9. | Devathathan | - | - |
| 10. | Thananjeyan | - | - |

According to the derangement in the types of Vatha, in 100% of the cases Viyaanan, Samaanan and Kirukaran were affected. Abaanan was affected in 25% of the cases.

**b. Piththa**

| S. No. | Classification of Piththa | No. of cases | Percentage |
|---|---|---|---|
| 1. | Analam | 20 | 100% |
| 2. | Ranjagam | 20 | 100% |
| 3. | Sathagam | - | - |
| 4. | Prasagam | 20 | 100% |
| 5. | Alosagam | - | - |

Among the cases studied Analam, Ranjagam and Prasagam was affected in 100% of the cases.

**c. Kabha**

| S. No. | Classification of Kabha | No. of cases | Percentage |
|---|---|---|---|
| 1. | Avalambagam | - | - |
| 2. | Kilethagam | 20 | 100% |
| 3. | Pothagam | - | - |
| 4. | Tharpavam | - | - |
| 5. | Santhigam | - | - |

Among the twenty cases, Kilethagam was affected in 100% of the cases.

**Table 11: Ezhu udarkattugal Reference**

| S. No. | Udarkattugal | No. of cases | Percentage |
|---|---|---|---|
| 1. | Saaram | 20 | 100% |
| 2. | Senneer | 20 | 100% |
| 3. | Oon | - | - |
| 4. | Kozhuppu | - | - |
| 5. | Enbu | 5 | 25% |
| 6. | Moolai | - | - |
| 7. | Sukkilam/Suronitham | - | - |

Saram and Senneer were affected in 20 patients due to the derangement of Vaatha and Piththa. Enbu was affected in 5 cases.

**Table 12: Envagai Thervugal Reference**

| S. No. | Envagai Thervugal | No. of cases | Percentage |
|---|---|---|---|
| 1. | Naa | 20 | 100% |
| 2. | Niram | 20 | 100% |
| 3. | Mozhi | - | - |
| 4. | Vizhi | 20 | 100% |
| 5. | Malam | 5 | 25% |
| 6. | Moothiram | - | - |
| 7. | Naadi | - | - |
| 8. | Sparisam | 5 | 25% |

Naa, Niram, Vizhi were affected due to the deficiency of senneer. Naa was affected in 25% of the cases. In 75% cases Niram was affected. In 50% of the cases Vizhi was affected. In 75% of the cases Naadi was affected.

**Treatment:**

All the 20 cases were treated with the trial medicine NELLI VADAGAM, one vadagam (500mg) twice a day with water and SOBAI KUDINEER, 15-30ml, thrice a day according to the age and weight.

**Results:**

Results were observed on the basis of two main criteria. One on the basis of clinical improvement and the other on the results derived from the blood picture.

After discharge, the patients were advised to attend the post graduate out-patient for further follow up. Number of days treated varies from 30-40 days.The efficacy was established through this period. During treatment Iron and protein rich diet was strictly advised.

**Table 13: Treatment Reference**

| S. No. | Observation | No. of Cases | Percentage |
|---|---|---|---|
| 1. | Good | 11 | 55% |
| 2. | Moderate | 6 | 30% |
| 3. | Mild | 3 | 15% |

Good response was observed in 11 cases, Moderate response in 6 cases and Mild response in 3 cases.

# DISCUSSION

Sobai is a clinical entity described by siddhars in which kabam is affected initially. Sobai is taken for clinical study in PG IV, Kuzhanthai Maruthuvam Department of Siddha Medical College, Palayamkottai. As a disease in children, age has to be restricted between 3-12 years.

Its clinical features like loss of appetite, swelling of the body, pallor of conjunctiva, skin and nails, dry skin, hypopigmented hairs, puffiness of face, abdominal distention, fever, diarrhoea are clinically identical with **Nutritional dropsy**, a clinical entity described in modern medical literatures. This study comprises primarily a survey of literatures in both siddha and modern aspect.

**Sex:**

Children of both sexes were affected and male, female ratio is 8:2. This is evident from the table – 1 (Age and Sex distribution) of Results and observation. In the literatures also there is no reference for the incidence of sobai to a specific sex.

**Age:**

The author took the cases in between the age of 3 and 12 years.

**Socio – economic status:**

Poor socio-economic status is the main predisposing factor. Frequently, malnutrition appears during weaning, as can occur with low variety diet and they are most prone to worm infestation and to

unhygienic life style. In this study 100 % of cases were belonged to poor socio – economic status.

**Paruva Kaalam:**

Most of the cases subjected to this study had premonitory symptoms of sobai in Kaar and Ilavenil Kaalam. According to siddha concept, Vetru nilai valarchi of kabam is in Ilavenil Kaalam and Thannilai valarchi is in Pinpani Kaalam.

**Thinai:**

Even though 90% of cases belong to Marutha Nilam, and 10% of cases belong to Neithal Nilam, they suffer due to unhygienic enivornment, change of life style, food habits and increased population etc, which results in increased incidence of sobai.

**Etiology:**

Generally sobai is mainly due to dietetic factors. History of the patients reveals that differential intake of food and food habits, anaemia, worm infestation and excessive intake of ash, soil and hay cause this disease.

In modern paediatrics, the etiology is based upon malnutrition and worm infestation.

In both systems, it is stated that any factor which causes vitiation of blood produce this disease.

**Mukkutram:**

Among three vital forces, kabam is initially affected and then the other two are affected. In vatham, abanan, viyanan, samanan and kirukaran were affected. In pitham, analam, ranjagam and prasagam were affected. In kabam, avalambagam was affected.

**Udal Thathukkal:**

In this Saaram, Senneer, and Enbu were affected.

**Envagai Thervugal:**

In this investigation, the changes of Naa, Niram, Vizhi, Sparisam, Malam, Moothiram and Naadi were noted.

| | | |
|---|---|---|
| Naa | - | Pallor, dryness and coating |
| Niram | - | Pallor of skin |
| Sparisam | - | Fever |
| Vizhi | - | Pallor of the conjunctiva |
| Malam | - | Some patients have diarrhoea |
| Moothiram | - | High coloured. |
| Naadi | - | pitha kabam |

Since children are in growing stage, their Naadi is not a main criterion to diagnose the disease.

**Treatment:**

In this study all the 20 cases were treated with “Nelli vadagam” – 1 vadagam [500 mg] twice a day with water and “Sobai kudineer” – 15-30 ml, thrice a day, according to the age and stamina.

The ingredients of the selected medicine belongs to வெப்பம் வீரியம் and கார்ப்பு பிரிவு, so this medicine suppress the increased kabam.

Biochemical analysis of the trial drug "**Nelli vadagam**" shows the presence of **calcium, ferrous iron, tannic acid, unsaturated compound**, **reducing sugar and amino acid** and **"Sobai kudineer**" shows the presence of **chloride, ferrous iron, unsaturated compound and amino acid**. Which are necessary for iron and protein deficiency.

Pharmacological action of the trial medicine has the significant haematinic and diuretic action, which reduces the fluid in sobai.The efficacy of the trial medicine is good in 55 % of cases.

# SUMMARY

About twenty cases of sobai selected for this study were admitted in In-patient ward and were observed for clinical diagnosis, lab diagnosis and were treated with the trial medicine Nelli Vadagam and Sobai Kudineer.

Clinical diagnosis of sobai was done on the basis of clinical features described in Bala Vaagadam text book.

Laboratory diagnosis was done by modern methods of examination, like serum protein, albumin, globulin ratio.

The various siddha aspects of examination of sobai were carried out and recorded in proforma.

The etiology and clinical features of **sobai** were correlated to the etiology and clinical features of **nutritional dropsy.**

The medicine chosen for clinical trial and management of sobai was Nelli Vadagam and Sobai Kudineer, three times a day. The dosage of the medicine is given in Annexture – I.

The observation made during the clinical study showed that the trial medicine was clinical effective.

Bio chemical analysis of the trial drug "Nelli Vadagam" share the presence of calcium, ferrous iron, tonnic acid, unsaturated compound, reducing sugar and Amino acid and "Sobai Kudineer" share the presence

of chloride, ferrous iron, unsaturated compound and amino acid. Which are necessary for iron and protein deficiency.

In pharmacological analysis the trial drug and significant haemetinic and diuretic action, this confirmed the clinical prognosis of sobai.

The parents were advised to given nutritious food for children.

# CONCLUSION

20 cases of **SOBAI** were admitted for the study in P.G.IV, In-patient ward Department Kuzhanthai Maruthuvam, G.S.M.C Hospital, Palayamkottai.The author selected Nelli Vadagam- 1 vadagam(500mg) with hot water and Sobai Kudineer- 15-30ml for the treatment of Sobai.

The clinical features, haematological investigations like serum protein, albumin, globulin ratio and Haemoglobin level of all cases showed that these cases were purely SOBAI is correlated with Nutritional Dropsy.

Clinically the trial drugs were very effective to the patients and free from side effects.

Clinical results shows Good Response in 55% of cases, Moderate Response in 30% of cases, Mild Response in 15% of cases.

# ANNEXURE – I

# PREPARTION AND PROPERTIES OF THE TRIAL MEDICINE

## நெல்லி வடகம்

**தேவையான சரக்குகள் :**

| | | |
|---|---|---|
| நெல்லி வற்றல் | : | 3 கிலோ கிராம் |
| இந்துப்பு | : | 10 கிராம் |
| கொடிவேலி வேர் | : | 10 கிராம் |
| இலவங்கப்பட்டை | : | 10 கிராம் |
| இலவங்கப்பத்திரி | : | 10 கிராம் |
| ஏலம் | : | 10 கிராம் |
| சிறுநாகப்பூ | : | 10 கிராம் |
| அதிமதுரம் | : | 10 கிராம் |
| சீரகம் | : | 10 கிராம் |
| சுக்கு | : | 15 கிராம் |
| மிளகு | : | 15 கிராம் |
| முந்திரிபழம் | : | 70 கிராம் |
| திப்பிலி | : | 70 கிராம் |
| சிவதை | : | 70 கிராம். |
| எலுமிச்சம் பழச்சாறு | : | தேவையான அளவு |
| சர்க்கரை | : | 3 கிலோ கிராம் |
| நெய் | : | 70 கிராம் |
| தேன் | : | 140 கிராம் |
| பால் | : | தேவையான அளவு |

**செய்முறை :**

நெல்லிவற்றலை எலுமிச்சம் பழச்சாற்றில் ஊறவைத்து உலர்த்திக் கொண்டும் மற்ற சரக்குகளை உரலிலிட்டு இடித்து சூரணித்து கொள்ள வேண்டும். நெல்லிவற்றலுக்கு நிகர் எடை சர்க்கரையை பாலில் கரைத்து பாகு செய்து இதனுடன் மேற்கண்ட சூரணத்தை கலந்து அத்துடன் நெய், தேன் சேர்த்து பிசைந்து 500 மி.கி. அளவுள்ள வடகமாக உருட்டி எடுத்துக்கொள்ளவும்.

**அளவு :**

1 வடகம், 2 வேளை, உணவிற்கு பின்

**அனுபானம் :**

காய்ந்தாறிய வெந்நீர்.

**தீரும் நோய்கள் :**

சோகை தீரும்.

**ஆயுட்காலம் :**

3 மாதங்கள்

**ஆதாரம் :**

ஆத்ம ரட்சாமிர்தம் என்னும் வைத்திய சார சங்கிரகம். -475

## சோபை குடிநீர்

**தேவையான சரக்குகள் :**

| | | |
|---|---|---|
| கீழ்காய் நெல்லி | : | 10 கிராம் |
| கரிசலாங்கண்ணி | : | 10 கிராம் |
| பேய்ப்புடல் | : | 5 கிராம் |
| வெண் மிளகு | : | 10 கிராம் |
| சோம்பு | : | 10 கிராம் |
| வில்வவேர் | : | 10 கிராம். |

**செய்முறை :**

மேற்படி சரக்குகளை ஒன்றிரண்டாக இடித்து ½ படி நீர் விட்டு வீசம் படியாகச் சுண்டக் காய்ச்சி வடிகட்டி கொள்ளவும்.

**அளவு :**

15-30 மிலி , 2 வேளை

**தீரும் நோய்கள் :**

சோகை தீரும்.

**ஆயுட்காலம் :**

3 மணி நேரம்

**ஆதாரம் :**

சித்த வைத்திய பதார்த்த குண விளக்கம், பக்கம் -251.

# PROPERTIES OF TRIAL MEDICINCE

## நெல்லி வடகம்

**1. நெல்லி :**

**சுத்தி :**

பால்விட்டு வேக வைத்துக் கொட்டையை நீக்கி உலர்த்துக.

Botanical Name : Emblica Officinalis

Family : Euphorbiaceae

**வேறுபெயர் :**

ஆமலகம், ஆலகம், ஆம்பல், ஆமரிகம், தாத்தாரி, தாத்திரி, கோரங்கம், மிறுதுபலா, மீதுந்து.

பயன்படும் உறுப்பு : காய்

சுவை : புளிப்பு, துவர்ப்பு, இனிப்பு

தன்மை : தட்பம்

பிரிவு : இனிப்பு

**Chemical Constituents:**

| | | |
|---|---|---|
| Moisture | - | 81.2% |
| Protein | - | 0.5% |
| Fat | - | 0.1% |
| Mineral Matters | - | 0.7% |
| Fibre | - | 3.4% |
| Carbohydrate | - | 14.1% |
| Calcium | - | 0.05% |
| Phosphorus | - | 0.02% |
| Iron | - | 1.2mg/100gm |
| Nictonic acid | - | 0.2mg /100gm |
| Vitamin C | - | 600-720mg/100gm |

Trigalloy glucose, Terchebin, covilagin, Ellagic acid and phyllembic acid are the chief constituents.

**Action:** Diuretic, Refringerant, Laxative.

**Uses:**

Useful in haemorhage, diarrhoea and dysentery. With iron it is a valuable remedy in anaemia, jaundice and dyspepsia.

**2. இந்துப்பு :**

**சுத்தி:** காடியில் 3 நாள் ஊறப் போட்டு வெய்யிலில் உலர்த்தி எடுக்க வேண்டும்.

Chemical Name : Sodium Chloride Impura.

**வேறு பெயர் : சைந்தவம், சிந்தூரம், மதியுப்பு**

**Action :**

Carminative, Digestive, Diuretic.

**Uses :**

Used in dyspepsia, anorexia, abdominal disorders, diarrhoea, flatulence.

**3. கொடிவேலி :**

**சுத்தி:** உள் நரம்பை நீக்கி மேல் பட்டையை மாத்திரம் சுத்தம் செய்து கொள்க.

Botanical Name : Plumbago zeylanica

Family : Plumbaginaceae

**வேறுபெயர் :**

அணிஞ்சில், சித்திர மூலம், தழல், வன்னி, தபனன், வன்னிபிரியம், கொடி வன்னி, திவிபிநாமம்.

**பயன்படும் உறுப்பு : வேர்**

**சுவை : கார்ப்பு. விறுவிறுப்பு**

தன்மை : வெப்பம்

பிரிவு : கார்ப்பு

**பொது குணம் :**

கட்டி, புண், கழலை, வளிநோய், அரையாப்புக்கட்டி, குத்தல், சோபை, மூலரோகம், உதிரக்கட்டு, நீரேற்றம், பெருவயிறு போம்.

**Constituents:**

Plumbagin

**Action:**

Digestive, Powerful irritant, antiseptic, anti periodic.

**Uses:**

Useful in dyspepsia, piles, anasarca, diarrhoea and skin diseases.

**4. இலவங்கப்பட்டை:**

**சுத்தி:** இரவியிலுலர்த்தி எடுத்துக் கொள்க.

Botanical Name : Cinnamomum Zeylanicum

Family : Lauraceae

வேறுபெயர் : கருவாப்பட்டை

பயன்படும் உறுப்பு : பட்டை

சுவை : காரமும், இனிப்புமுடையது.

தன்மை : தட்பம்

பிரிவு : இனிப்பு

**Constituents :**

Volatile oil, Cinnamic Acid, Resin, Tannin, Sugar, Mannit, Starch, Mucilage, ash etc.

**Action :**

Carminative, Antispasmodic, Aromatic, Stimulant, haemostatic, Astringent, Antiseptic, Stomachic and germicide.

**Uses :**

Used in dyspepsia, flatulency, diarrhoea and vomiting.

**5. இலவங்கப்பத்திரி :**

**சுத்தி:** இரவியிலுலர்த்தி எடுத்துக் கொள்க.

Botanical Name : Cinnamomum Tamala.

Family : Lauraceae

பயன்படும் உறுப்பு : இலை, பட்டை

சுவை : கார்ப்பு

தன்மை : வெப்பம்

பிரிவு : கார்ப்பு

**Constituents:**

Essential Oil, Eugenol, Terpene and Cinnamic aldehyde.

**Action:**

Carminative, Stimulant, Diuretic, Diaphoretic, Deobstruent and lactagogue.

**Uses :**

Used in cough, flatulence,dyspepsia and fever.

**6. ஏலம் :**

**சுத்தி:** மண் முதலியவையின்றி ஆய்ந்து புடைத்து இரவியிலுலர்த்திக் கொள்க.

Botanical Name : Elletaria Cardrmomum.

Family : Scitaminaceae.

வேறுபெயர் : ஆஞ்சி, கோரங்கம், துடி.

பயன்படும் உறுப்பு : காய்

சுவை : கார்ப்பு

தன்மை : வெப்பம்.

பிரிவு : கார்ப்பு.

**Constituents** : Essential Oil, Terpinyl acetate, Cineole, Free terpineol and limonene.

**Action :**

Powerful aromatic, Stimulant, Carminative, Stomachic and diuretic.

**Uses:** Good Stomachic, useful in atonic dyspepsia

**8. சிறுநாகப்பூ :**

**சுத்தி:** மண் முதலியவையின்றி ஆய்ந்து புடைத்து இரவியிலுலர்த்திக் கொள்க.

Botanical Name : Mesua ferrea.

Family : Guttiferae.

வேறுபெயர் : நாகம், நாகேசரம், காஞ்சநம், ஏமம்.

பயன்படும் உறுப்பு : மொட்டு

சுவை : சிறுகைப்பு, துவர்ப்பு

தன்மை : தட்பம்

பிரிவு : கார்ப்பு.

**Constituents :**

Essential Oil – from Oleo-resion, tannin.

**Action :**

Astringent, Stomachic, Stimulant and germicide.

**Uses :**

Useful in Bleeding piles, thirst, irritability of the stomach, cough and dyspepsia.

**9. அதிமதுரம் :**

**சுத்தி:**சுத்த நீரில் அலம்பி மேல் தோலைச் சீவிச் சிறு துண்டுகளாக நறுக்கி உலர்த்திக் கொள்க.

Botanical Name : Glycyrrhiza glabra

Family : Papilionaceae

வேறுபெயர் : அதிங்கம், அட்டி, மதூகம், குன்றிவேர்

பயன்படும் உறுப்பு : வேர்

சுவை : இனிப்பு

தன்மை : சீதம்

பிரிவு : இனிப்பு

**Constituents :**

Glycyrrhizin, asparagin, sugar, starch, acid resin, gum, mucilage, phosphoric acids, sulphuric acid and malic acid, calcium and magnesium salts.

**Action :**

Tonic, cooling, demulcent, expectorant, diuretic, emmenagogue and gentle laxative.

**Uses :**

Used in anorexia, Vomiting, emaciation, persistent low fever, sore throat, asthma.

**10. சீரகம் :**

**சுத்தி:** மண் முதலியவையின்றி ஆய்ந்து புடைத்து இரவியிலுலர்த்திக் கொள்க.

Botanical Name : Cuminum cyminum

Family : Apiaceae

**வேறுபெயர் :**

அசை, சீரி, உபகும்பபீசம், நற்சீரி, துத்தசாம்பலம், பிரத்திவிகா, பித்தநாசனி, போசனகுடோரி, மேத்தியம்.

பயன்படும் உறுப்பு : விதை

சுவை : கார்ப்பு, இனிப்பபு

தன்மை : தட்பம்

பிரிவு : இனிப்பு

**Constituents :**

Essential oil Thymene-Contains cuminol or cumicaldehyde, cymene, terpene.

**Action :**

Carminative, Aromatic, Stomachic, Stimulant, diuretic, emmenagogue.

**Uses :**

Medicinally useful in hoarseness of voice, dyspepsia and chronic diarrhoea.

**11. சுக்கு:**

**சுத்தி:** இதன் மேல் தோலைச் சீவி, உலர்த்திக் கொள்ளவும்.

Botanical Name : Zingiber officinalis.

Family : Zingiberaceae

வேறுபெயர் : அருக்கண், அதகம், ஆர்த்ரகம், உபகுல்லம், கடுபத்திரம், நாகரம், விடமூடிய அமிர்தம், வேர்க்கொம்பு.

பயன்படும் உறுப்பு : கிழங்கு (உலர்ந்தது)

சுவை : கார்ப்பு

தன்மை : வெப்பம்

பிரிவு : கார்ப்பு

**பொது குணம் :**

சூலை, மந்தம், நெஞ்செரிச்சல், புளியேப்பம், இரைப்பு, இருமல், கழிச்சல், நீரேற்றம், குன்மம், வயிற்றுப்புசம், தலைநோய், பாண்டு, ஐயசுரம் போம்.

**Constituents :**

Camphene, phellandrene, Zingiberine, Cineol, borneol, gingerol, oleoresin - gingerin, starch, k-oxalate.

**Action :**

Aromatic, Carminative, stimulant, stomachic, digestive, local stimulant and rubefacient.

**Uses :**

**E**xtremely valuable in dyspepsia, loss of appetite, flatulence, vomiting, spasms. Strong diuretic in cases of general dropsy of any cause.

**12. மிளகு :**

**சுத்தி:** புளித்த மோரில் ஒரு ஜாமம் ஊறப்போட்டு எடுத்து உலர்த்திக் கொள்க

| | | |
|---|---|---|
| Botanical Name | : | Piper nigrum |
| Family | : | Piperaceae |
| வேறுபெயர் | : | கலினை, கறி, காயம், கோளகம், திரங்கல், மிரியல், சருமபந்தம், மலையாளி. |
| பயன்படும் உறுப்பு | : | விதை |
| சுவை | : | கைப்பு, கார்ப்பு |
| தன்மை | : | வெப்பம் |
| பிரிவு | : | கார்ப்பு |

**பொது குணம்:**

குளிர்சுரம், பாண்டு, கோழை, கழிச்சல், குன்மம், சுவையின்மை, மூலம், சந்நியாசம், அபஸ்மாரம், பிரமேகம், குய்யரோகம், சோணிதவாதம், செரியாமை, காமாலை.

**Constituents:**

Piperine, Piperidine, chavacin, volatile oil, starch, lignin.

**Action:**

Carminative, antiperiodic, rubefacient, stimulant, resolvent, anti pyretic.

**Uses:**

Dyspepsia, Flatulence, Constipation, Gastrictroubles, ascites, anaemia, worms, asthma.

**13. திராட்சை (முந்திரிபழம்)**

Botanical Name : Vitis Vinifera

Family : Vitaceae

வேறுபெயர் : கொடிமுந்திரி, முந்திரிகை, மதுரசம், கோத்திரிகை.

பயன்படும் உறுப்பு : பழம்

சுவை : தட்பம்

பிரிவு : இனிப்பு

**Constituents:**

Raisins (Dried grapes) Contain Calcium, Magnesium, Potassium, Phosphorus iron, gum and sugar.

**Action:**

Laxative, demulcent, expectorant, suppurative, nutritious and blood- purifier, diuretic.

**Uses:** Used in anaemia and wasting diseases, dyspepsia, Jaundice and rheumatism.

### 14. திப்பிலி:

**சுத்தி:** கொடிவேலி இலைச் சாற்றில் ஒரு நாழிகை ஊற வைத்துப் பின்னர் இரவியிலுலர்த்திக் கொள்க.

Botanical Name : Piper Longum

Family : Piperaceae

வேறுபெயர் : ஆர்கதி, காமன், குடோரி, கோழையறுக்கி, பிப்பிலி, வைதேகி, ஆதிமருந்து.

பயன்படும் உறுப்பு : காய்

சுவை : கார்ப்பு

தன்மை : வெப்பம்

பிரிவு : இனிப்பு

**Constituents:**

Resin, Votatile oil, Starch, Gum, Fatty Oil, Inorganic matter and an alkaloid, piperine.

**Action:**

Stimulant, Carminative, alterative, aphrodisiac, diuretic, vermifuge and emmenagogue.

**Uses:**

Used in dyspepsia, in enlargement of spleen, anorexia etc.

### 15. சிவதை:

**சுத்தி:** இதனை பாலில் வேக வைத்து உள் கட்டையை நீக்கி உலர்த்திக் கொள்ளவும்.

Botanical Name : Ipomea turpethum

Family : Convolvulaceae

பயன்படும் உறுப்பு : வேர்

சுவை : கைப்பு

தன்மை : வெப்பம்

பிரிவு : கார்ப்பு

**Constituents:**

Turpethin, some ether soluble resin, a volatile oil, a yellow colouring matter, albumin, starch, lignin, salts and ferric oxide.

**Action:**

Cathartic, Laxative, Diaphoretic and diuretic.

**Uses:**

Used in melancholia, gout, dropsy, leprosy, jaundice.

**16. எலுமிச்சம் பழச்சாறு :**

Botanical Name : Citrus Medica

Family : Rutaceae

Parts Used : பழரசம்

வேறு பெயர் : சதாபலம், சம்பீரம்

சுவை : புளிப்பு

தன்மை : வெப்பம்

பிரிவு : கார்ப்பு

**Constituents:**

Citric acid, Phosphoric and Malic acids, Citrates of potassium, Sugar, Mucilage and ashes, Hesperidin.

**Action :**

Antiseptic, Tonic, Diuretic, Digestive, Stimulant, Diaphoretic.

**Uses :**

Useful in hypertrophy of spleen, dysentry and diarrhoea. Also used in febrile and inflammatory conditions.

### 17. சர்க்கரை

**சுத்தி:** அம்மியில் வைத்தக் கட்டியெல்லாம் நொறுங்கும்படி அரைத்து முறத்திலிட்டுக் கொழித்துக் கொள்க.

| | | |
|---|---|---|
| Botanical Name | : | Saccharum Officinarum |
| Family | : | Graminae |
| Parts Used | : | சர்க்கரை |
| வேறு பெயர் | : | புனற்பூசம், இக்கு, வேய். |
| சுவை | : | இனிப்பு |
| தன்மை | : | சீதம் |
| பிரிவு | : | இனிப்பு |

**Action**:

Antiseptic, Demulcent.

**Constituents:**

Juice Contains saccharine matter (Canesugar), water, mucilage, resin, fat, albumin, guanine, co-oxalate.

### 18. நெய்

பொதுக்குணம்:

"தாகமுழ லைசுட்கம் வாந்தி பித்தம் வாயுபிர
மேகம் வயிற்றெரிவு விக்கலழல் - மாகாகங்
குன்மம் வறட்சி குடற்புரட்ட லஸ்திசுட்களஞ்
சொன் மூலம் போக்குநிறைத் துப்பு".

- குணபாடம் தாது சீவம்

உழலைப்பிணி, பித்தாதிக்கம், வயிற்றிலெரிப்பு, வயிற்றுவலி, மூலரோகம் முதலியன நீங்கும்.

**Action**:

Coolent, Emolient, Stomachic, Nutrient Improves memory.

### 19. தேன்

**Action:**

Demulcent, Digestive, Laxative, Astringent, Antiseptic,Tonic.

**மலைத் தேனின் குணம்**

"ஐயிரும லீளைவீக்க லக்கிப்புண் வெப்புடல் நோய்
பைய வொழியும் பசியுமுறும் - வையகத்தி
லெண்ணுமிசை யாமருந்திற் கேற்ற வனுபான
நண்ணு மலைத் தேனொன்றி னால்"-

- குணபாடம் சீவ வகுப்பு

மலைத்தேனினால் கபகாசம், சுவாசம், விக்கல், கண் விரணம், சுரம், தேகக்கடுப்பு முதலிய பிணிகள் நீங்கும். பசியும், தொனியும் உண்டாகும். இது மருந்துகளுக்கு நற்றுணை மருந்தாகும்.

### 20. பால்:

வேறு பெயர் : பயம், கீரம், சுதை, அமுது, துத்தம்

**பொது குணம்**

"பாலர் கிழவர் பழஞ்சரத்தோர் புண்ணாளி
சூலையர் மேகத்தோர் துர்ப்பலத்தோர் - ஏலுமிவர்
எல்லார்க்கு மாகும் இளைத்தவர்க்குஞ் சாதகமாய்
நல்லாய் பசுவின்பால் நாட்டு".

**Constituents:**

Large proportion of calcium phosphate, potassium, magnesium phosphates, sodium chloride and trace of phosphate of iron.

**Action:**

Demulcent, nutrient, cardiac tonic, promotes memory and strength.

**Uses:**

Chronic fever, dyspepsia, intestinal disorder, ascites and anasarca.

## சோபை குடிநீர்

### 1. கீழ்காய் நெல்லி

Botanical Name : Phyllanthus niruri

Family : Euphorbiaceae

பயன்படும் உறுப்பு : சமூலம்

சுவை : துவர்ப்பு, கைப்பு, புளிப்பு, இனிப்பு

தன்மை : தட்பம்

பிரிவு : இனிப்பு

**Action:**

Diuretic, Astringent, Refringent, Resolvent.

**Uses:**

Whole plant is employed in some forms of dropsy, gonorrhoea, menorrhagia and also other genitourinary infection, useful in dyspepsia.

**Constituents:** Phyllanthin.

### 2. கரிசலாங் கண்ணி

Botanical Name : Eclipta Prostata

Family : Asteraceae

**வேறுபெயர்கள்:**

கரிசனாங்கண்ணி, கரிசாலை, கரியசாலை, கைகேசி, கைவீசி இலை, கையாந்தகரை, பிருங்கராஜம், கரிப்பான், கையான், தேகராஜம்.

பயன்படும் உறுப்பு : பூண்டு

சுவை : கைப்பு

தன்மை : வெப்பம்

பிரிவு : கார்ப்பு

**Action:**

Hepatotonic, Cholagogue, Tonic, Alterative, Emetic, Resolvent, Purgative.

**பொது குணம்**

குரற்கம்மல், காமாலை, குட்டம், சோபை, பாண்டு, பல்நோய் ஆகியவை போம். உடலிற் பொற்சாயலும் பலமும் உண்டாகும்.

**Uses:**

Used in enlarged liver, spleen and dropsy.

**3. சோம்பு:**

| | | |
|---|---|---|
| Botanical Name | : | Pimpinella anisum |
| Family | : | Umbelliferae |
| வேறுபெயர் | : | வெண்சீரகம், பெருஞ்சீரகம் |
| பயன்படும் உறுப்பு | : | விதை |
| சுவை | : | மணமுடன் கூடிய கார்ப்பும், இனிப்பும் |
| தன்மை | : | வெப்பம் |
| பிரிவு | : | கார்ப்பு |
| **Constituents** | : | Anethole (or) Anise camphor, Anise aldehyde, Methyl – Chavicol |

**Action:**

Stimulant, carminative, diuretic, Slightly expectorant.

**Uses:**

Useful in bowel complaints as well as in bronchial catarrh.

**4. வில்வம்:**

Botanical Name : Aegle marmelos

Family : Rutaceae

**வேறுபெயர்:**

குசாபி, கூவிளம், கூவிளை, சிவத்துருமம், நின்மலி, மாதூரம்.

**பயன்படும் உறுப்பு : வேர்**

**சுவை : துவர்ப்பு, கைப்பு**

**தன்மை : தட்பம்**

**பிரிவு : கார்ப்பு**

**பொது குணம்**

குன்மம், முக்குற்றத்தின் கேடு, சோபை, ஐயத்தாலுண்டான நீர்வேட்கை, சுரம், நீரேற்றம், முப்பிணி, உடல் கடுப்பு இவைகளை நீக்கும்.

**Constituents:**

Reducing sugars and tannin mainly

**Action:**

Tonic, stomachic, astringent, haemostatic, aphrodisiac.

**Uses:**

Used in intermittent fever, hypochondriasis, and palpitation of heart.

**5. பேய்ப்புடல்**

Botanical Name : Trichosanthes Cucumerina

Family : Cucurbitaceae

Part used : Root,

**சுவை : கைப்பு**

**தன்மை : வெப்பம்**

**பிரிவு : கார்ப்பு**

**Action:**

Purgative and tonic, Alterative and febrifuge.

**Uses:**

Used in jaundice, anasarca and ascites.

## 6. வெண்மிளகு

Botanical Name : Piper album

Family : Piperaceae

Part used : Seeds.

**சுவை : கார்ப்பு**

**தன்மை : வெப்பம்**

**பிரிவு : கார்ப்பு**

**Action :** Carminative, Stimulant.

**Uses:**

Dyspepsia, Flatulence, Constipation, Gastric troubles, Ascites, Anaemia, Worms, Asthma.

# ANNEXURE - II

# BIO – CHEMICAL ANALYSIS OF NELLI VADAGAM

**Preparation of the Extract**

5gms of the drug was weighed accurately and placed in a 250ml clean beaker. Then 50ml distilled water was added and dissolved well. Then it was boiled well for about 10 minutes. It is cooled and filtered in a 100ml volumetric flask and then it is made up to 100ml with distilled water. This fluid is taken for analysis

**QUALITATIVE ANALYSIS**

| S. No. | Experiment | Observation | Inference |
|---|---|---|---|
| 1. | **TEST FOR CALCIUM**<br>2ml of the above prepared extract is taken in a clean test tube. 2 ml of 4% ammonium oxalate solution in added to it. | A white precipitate is formed. | **Indicates the presence of calcium.** |
| 2. | **TEST FOR SULPHATE:**<br>2ml of the extract is added to 5% barium chloride solution. | No white precipitate is formed. | Absence of sulphate. |
| 3. | **TEST FOR CHLORIDE**<br>The extract is treated with silver nitrate solution. | No white precipitate is formed. | Absence of chloride. |
| 4. | **TEST FOR CARBONATE**<br>The substance is treated with concentrated HCL. | No brisk effervescence is formed. | Absence of carbonate. |

| | | | |
|---|---|---|---|
| 5. | **TEST FOR STARCH**<br>The extract is added with weak iodine solution. | Blue colour is formed | **Indicates the presence of Starch** |
| 6. | **TEST FOR IRON FERRIC**<br>The extract is treated with concentrated glacial acetic acid and potassium ferro cyanide. | No blue colour is formed. | Absence of ferric iron. |
| 7. | **TEST OF IRON :FERROUS:**<br>The extract is treated with concentrated Nitric acid and ammonium thio cynate. | Blood red colour is formed. | **Indicates the presence of ferrous Iron.** |
| 8. | **TEST FOR PHOSPHATE**<br>The extract is treated with ammonium molybdate and concentrated nitric acid. | No Yellow precipitate is formed. | Absence of phosphate. |
| 9. | **TEST FOR ALBUMIN**<br>The extract is treated with Esbach's reagent. | No yellow precipitate is formed. | Absence of albumin. |
| 10. | **TEST FOR TANNIC ACID**<br>The extract is treated with ferric chloride. | Blue black precipitate is formed. | **Indicates the presence of Tannic acid.** |
| 11. | **TEST FOR UNSATURATION**<br>Potassium permanganate solution is added to the extract. | It gets decolourised. | **Indicates the Presence of unsaturated compound.** |

| | | | |
|---|---|---|---|
| 12. | **TEST FOR THE REDUCING SUGAR**<br>5ml of benedict's qualitative solution is taken in a test tube and allowed to boil for 2 mts and added 8-10 drops of the extract and again boil it for 2 mts. | Colour change occurs. | **Indicates the presence of reducing sugar.** |
| 13. | **TEST FOR AMINO ACID:**<br>One or two drops of the extract is placed on a filter paper and dried it well. After drying, 1% Ninhydrin is sprayed over the same and dried it well. | Violet colour is formed. | **Indicates the presence of of amino acid.** |

## Inference:

The trial drug "Nelli vadagam" contains calcium, starch, ferrous Iron, Tannic acid, unsaturated compound, reducing sugar and aminoacid.

# BIO – CHEMICAL ANALYSIS OF SOBAI KUDINEER CHOORANAM

**Preparation of the Extract**

5gms of the drug was weighed accurately and placed in a 250ml clean beaker. Then 50ml distilled water is added and dissolved well. Then it is boiled well for about 10 minutes. It is cooled and filtered in a 100ml volumetric flask and then it is made up to 100ml with distilled water. This fluid is taken for analysis

**QUALITATIVE ANALYSIS**

| S. No. | Experiment | Observation | Inference |
|---|---|---|---|
| 1. | **TEST FOR CALCIUM**<br>2ml of the above prepared extract is taken in a clean test tube. To this add 2 ml of 4% ammonium oxalate solution. | No white precipitate is formed. | Absence of calcium. |
| 2. | **TEST FOR SULPHATE:**<br>2ml of the extract is added to 5% barium chloride solution. | No White precipitate is formed. | Absence of sulphate. |
| 3. | **TEST FOR CHLORIDE**<br>The extract is treated with silver nitrate solution. | A White precipitate is formed. | **Indicates the presence of chloride.** |
| 4. | **TEST FOR CARBONATE**<br>The substance is treated with concentrated Hcl. | No brisk effervescence is formed. | Absence of carbonate. |

| | | | |
|---|---|---|---|
| 5. | **TEST FOR STARCH**<br>The extract is added with weak iodine solution. | No blue colour is formed | Absence of starch. |
| 6. | **TEST FOR IRON FERRIC**<br>The extract is treated with concentrated glacial acetic acid and potassium ferro cyanide. | No blue colour is formed. | Absence of ferric iron. |
| 7. | **TEST OF IRON : FERROUS:**<br>The extract is treated with concentrated Nitric acid and ammonium thio cynate. | Blood red colour is formed. | **Indicates the presence of ferrous iron.** |
| 8. | **TEST FOR PHOSPHATE**<br>The extract is treated with ammonium molybdate and concentrated nitric acid. | No Yellow precipitate is formed. | Absence of phosphate. |
| 9. | **TEST FOR ALBUMIN**<br>The extract is treated with Esbach's reagent. | No yellow precipitate is formed. | Absence of albumin. |
| 10. | **TEST FOR TANNIC ACID**<br>The extract is treated with ferric chloride. | No blue black precipitate is formed. | Absence of Tannic acid. |
| 11. | **TEST FOR UNSATURATION**<br>Potassium permanganate solution is added to the extract. | It gets decolorized. | **Indicates the presence of unsaturated compound.** |

| | | | |
|---|---|---|---|
| 12. | **TEST FOR THE REDUCING SUGAR**<br>5ml of benedict's qualitative solution is taken in a test tube and allowed to boil for 2 mts and added 8-10 drops of the extract and again boil it for 2 mts. | No colour change occurs. | Absence of reducing sugar. |
| 13. | **TEST FOR AMINO ACID:**<br>One or two drops of the extract is placed on a filter paper and dried well. After drying, 1% ninhydrin is sprayed over the same and dried well. | Violet colour is formed. | **Indicates the presence of amino acid.** |

The trial drug "SOBAI KUDINEER" contains Chloride,Ferrous iron,Unsaturated compound and amino acid.

# ANNEXURE - III

# PHARMACOLOGICAL ANALYSIS OF SOBAI KUDINEER

**Study on the Diuretic effect of SOBAI KUDINEER**

In this method white albino rats are used. The animals are deprived of food overnight before the test. Three groups of rats, each consisting of five numbers between 150 – 200gm body weights. One group of rats is given 5ml of water. The other two groups are treated with the test medicines. The rats are put inside the metabolic cages. The collection of urine is measured after three and five hours.

The total collection of urine excreted for the three groups are noted. The estimation of sodium and potassium are also done. The differences between the three groups show the diuretic effect of the medicines.

**Inference:**

| S. No. | Drug | Dose/ 100gm body weight | URINE COLLECTION | | | Na mEq/lit | K mEq/lit |
|---|---|---|---|---|---|---|---|
| | | | 1 ½ hours | 3 hours | 4 ½ hours | | |
| 1. | Control (Water) | Each rat 2ml | 2ml | 3ml | 4.5ml | 132 | 3.2 |
| 2. | Sobai kudineer | Each rat 100mg(2ml) | 4ml | 6ml | 9ml | 148 | 4.7 |

SOBAI KUDINEER has got significant *diuretic* effect.

# ANNEXURE IV

## PHARMACOLOGICAL ANALYSIS OF

## NELLI VADAGAM

## STUDY ON HAEMATINIC EFFECT

**Preparation of the trial drug:**

Variety of preparations in Siddha system of medicine is well known for its haematinic effects of which Nelli Vadagam is one of the best. To prove the efficacy of this medicine, an attempt was made to study its effect using "Albino rats". For this purpose, rats were made anaemic by the following procedure.

**Artificially Induced Iron deficiency:**

The albino rats taken for this experiment were kept in aluminium cages and provided with drinking water and milk, free from iron. The administration of the iron preparation under investigation was started, when the haemoglobin level fell to nearly 6.0gm/100ml. At the beginning of the experiment 40% was determined.

**Study on Rats:**

Nine albino rats were first divided into three equal groups, with three rats in each group. The first group received water. The second group received honey. The third group received the test drug at a dose of 100mg/1ml of Nelli Vadagam. All the above procedures were continued for four weeks at the rate of once in a day. The Haemoglobin levels of rats were measured after 1 week, 2 weeks, 3 weeks and 4 weeks. The results observed are tabulated in the following chart.

| S. No. | Drug | Dose | Before Drug administration | | | | After drug administration | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Initial gm/dl | I week gm/dl | II week gm/dl | III week gm/dl | IV week gm/dl | V Week gm/dl | |
| 1 | Water | 2ml | 5.8 | 5.8 | 5.6 | 5.5 | 5.3 | 5.1 | 5.6 |
| | | 2ml | 6.5 | 6.5 | 6.2 | 6.0 | 5.7 | 5.4 | |
| | | 2ml | 6.8 | 6.8 | 6.5 | 6.2 | 6.0 | 5.7 | |
| | | 2ml | 6.4 | 6.4 | 6.2 | 6.0 | 5.7 | 5.2 | |
| | | 2ml | 7.1 | 7.1 | 6.9 | 6.6 | 6.4 | 6.0 | |
| | | 2ml | 6.9 | 6.9 | 6.7 | 6.5 | 6.1 | 5.7 | |
| | | | 6.5 | 6.5 | 6.3 | 6.1 | 6.0 | 5.6 | |
| 2 | Sobai Kudineer | 100mg | 5.4 | 5.6 | 6.0 | 6.8 | 7.7 | 8.9 | 9.0 |
| | | 100mg | 5.9 | 6.1 | 6.6 | 7.1 | 8.0 | 8.7 | |
| | | 100mg | 6.1 | 6.3 | 6.5 | 7.2 | 7.8 | 8.2 | |
| | | 100mg | 6.3 | 6.5 | 6.7 | 7.2 | 8.0 | 9.1 | |
| | | 100mg | 6.8 | 6.9 | 7.2 | 7.8 | 8.5 | 9.3 | |
| | | 100mg | 7.2 | 7.5 | 7.7 | 8.2 | 8.7 | 9.8 | |
| | | | 6.2 | 6.4 | 6.7 | 7.3 | 8.1 | 9.0 | |

**Discussion:**

A remarkable raise of Hb above 9gms/dl is seen in the group treated with trial drug. From these studies it is clear that the drug Nelli Vadagam has significant haematinic action.

# ANNEXURE-IV

## GOVERNMENT SIDDHA MEDICAL COLLEGE & HOSPITAL

## PALAYAMKOTTAI, TIRUNELVELI – 627 002

## BRANCH – IV KUZHANTHAI MARUTHUVAM

## PROFORMA OF CASE SHEET FOR SOBAI

| | | | |
|---|---|---|---|
| Name of the medical unit | : | Informant | : |
| I.P.No | : | Nationality | : |
| Name | : | Religion | : |
| Age | : | Date of admission | : |
| Sex | : | Date of Discharge | : |
| Occupation | : | Diagnosis | : |
| Address | : | Medical officer | : |

1. Complaints and duration :
2. History of Present illness :
3. History of previous illness :
4. Antenatal History :
5. Birth History :
6. Neonatal History :
7. Developmental history :
8. Socio-economic history :
9. Dietetic History :
10. Family History :
11. Immunization History :

## CLINICAL EXAMINATION

## GENERAL EXAMINATION

1. Consciousness :

2. Stature :

    a. Height :

    b. weight :

    c. Head circumference :

    d. Mid-arm circumference :

3. Nourishment :

4. Facies :

5. Pallor :

6. Jaundice :

7. Cyanosis :

8. Clubbing :

9. Koilonychia :

10. Jugular vein pulsation :

11. Lymphadenopathy :

12. Abdominal distension :

13. Pedal oedema :

14. Temperature :

15. Pulse rate :

16. Respiratory rate :

17. Blood Pressure :

**Siddha Aspects**

**Nilam:**

1. Kurinji :
2. Mullai :
3. Marutham :
4. Neithal :
5. Palai :

**Udal nilai:**

1. Vatham :
2. Pitham :
3. Kabam :
4. Kalappu :

**Paruva Kaalam:**

1. Kaar :
2. Koothir :
3. Munpani :
4. Pinpani :
5. Elavenil :
6. Mudhuvenil :

**Pori pulangal:**

1. Mei :
2. Vaai :
3. Kann :
4. Mookku :
5. Sevi :

**Kanmenthiriyam:**

1. Kai :
2. Kaal :
3. Vaai :
4. Eruvai :
5. Karuvai :

**Pira uruppukalin nilai:**

1. Irudhayam :
2. Puppusam :
3. Eraippai :
4. Kalleeral :
5. Manneeral :
6. Kudal :
7. Siruneeragam :
8. Siruneerpai :

**Uyir Thathukkal:**

**a. Vatham:**

1. Pranan :
2. Abanan :
3. Viyanan :
4. Uthanan :
5. Samanan :
6. Naagan :
7. Koorman :
8. Kirukaran :
9. Devathathan :
10. Dhananjeyan :

**b. Pitham:**

1. Analam :
2. Ranjagam :
3. Sathagam :
4. Prasagam :
5. Alosagam :

**c. Kabam:**

1. Avalambagam :
2. Kilethagam :
3. Pothagam :
4. Tharpagam :
5. Santhigam :

**Udal Thathukkal**

1. Saaram :
2. Senneer :
3. Oon :
4. Kozhuppu :
5. Enbu :
6. Moolai :
7. Sukkilam / Suronitham:

(Not applicable)

**Envagai Thervugal**

1. Naadi :
2. Sparisam :
3. Naa :
4. Niram :
5. Mozhi :
6. Vizhi :
7. Malam :
8. Moothiram :

**MODERN ASPECTS**

**SYSTEMIC EXAMINATION**

**CARDIO VASCULAR SYSTEM:**

1. Inspection :

2. Palpation :

3. Percussion :

4. Auscultation :

**Examination of other systems :**

Respiratory system :

Abdomen :

Central nervous system :

**Biochemical and Laboratory investigation:**

**Blood:**

| | | | |
|---|---|---|---|
| TC | : | Serum protein | : |
| DC | : | Albumin / Globulin ratio | : |
| ESR | : | Serum cholesterol | : |
| Hb % | : | Blood urea | : |
| RBC | : | | |
| PCV | : | | |
| MCV | : | | |
| MCH | : | | |
| MCHC | : | | |

**X – Ray chest :** PA view :

**Urine:**

Albumin :

Sugar :

Deposits :

**Stools:**

Ova :

Cyst :

Occult blood :

**CASE SUMMARY:**

Treatment :

Advice :

**Daily Progress:**

| Date | Symptoms | Medicine |
|---|---|---|
| | | |

**GOVERNMENT SIDDHA MEDICAL COLLEGE & HOSPITAL**

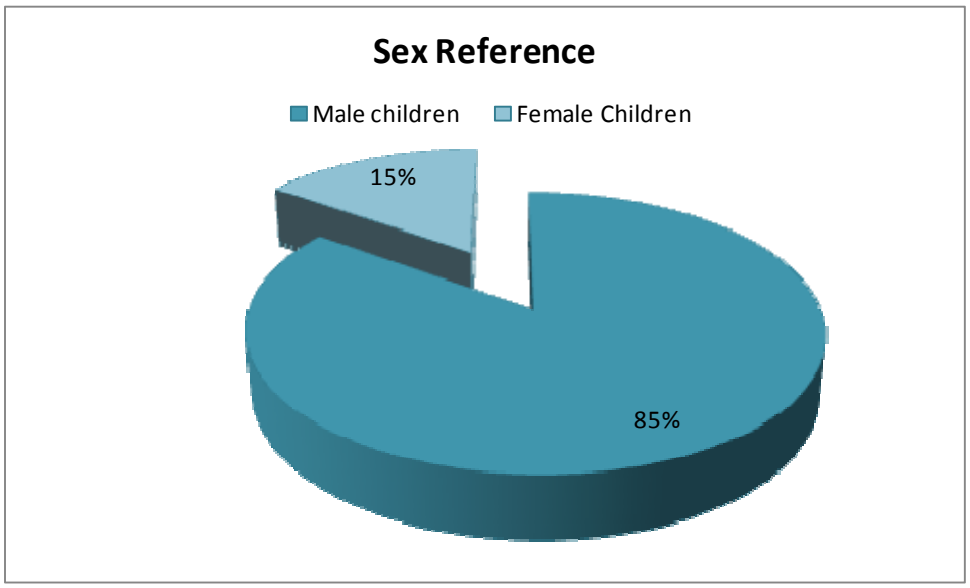
**PALAYAMKOTTAI, TIRUNELVELI – 627 002**

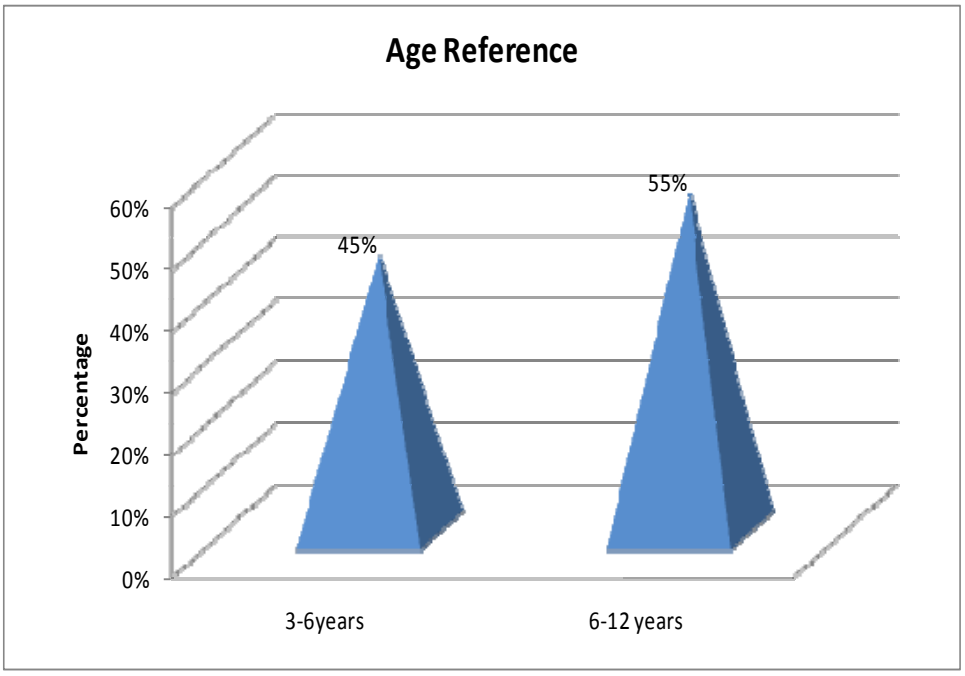
**BRANCH – IV KUZHANTHAI MARUTHUVAM**

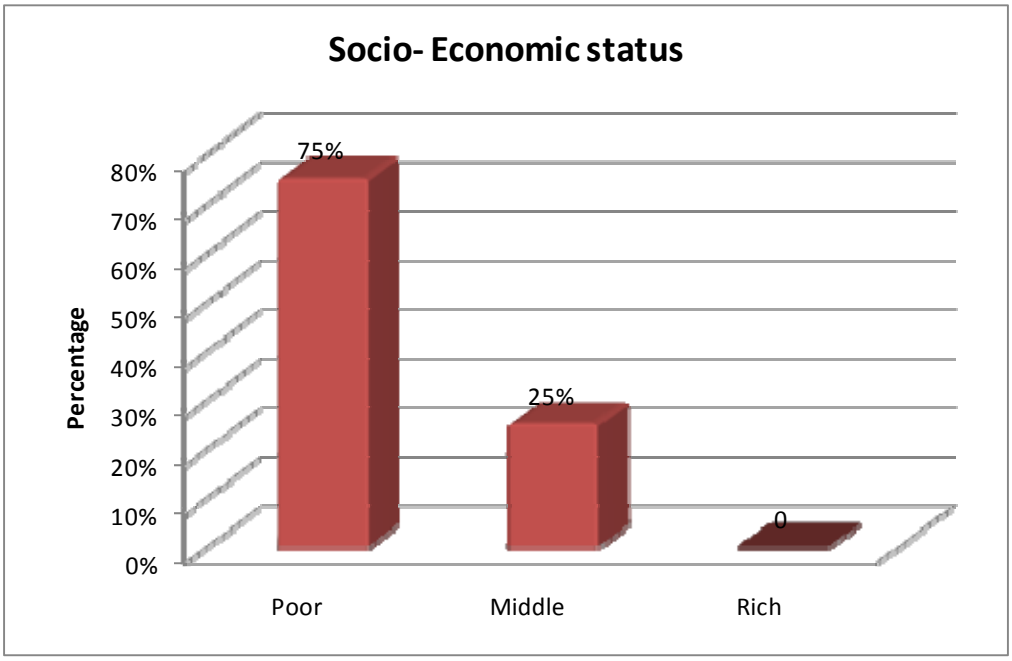
**ADMISSION – DISCHARGE SHEET**

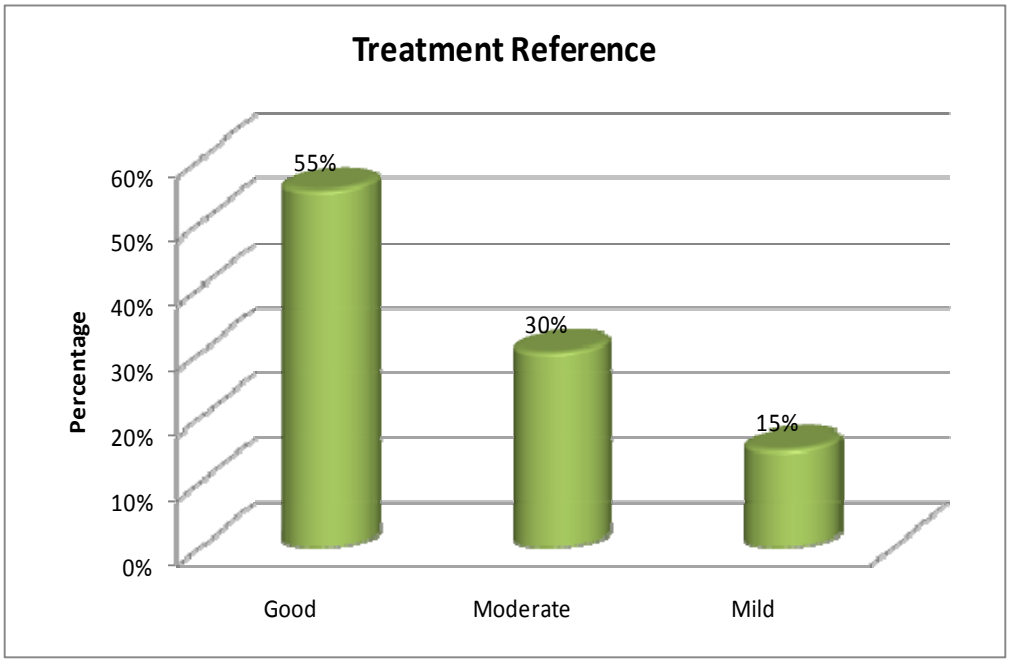
| | | | |
|---|---|---|---|
| Name of the medical unit: | | Informant | : |
| I.P.No | : | Nationality | : |
| Name | : | Religion | : |
| Age | : | Date of admission | : |
| Sex | : | Date of Discharge | : |
| Occupation | : | Diagnosis | : |
| Address | : | Medical officer | : |

| S.No. | Signs and Symptoms | During Admission | During Discharge |
|---|---|---|---|
| 1. | Pallor of conjunctive, Nail beds, Tongue, Skin | | |
| 2. | Edema in both legs | | |
| 3. | Diarrhoea | | |
| 4. | Oliguria | | |
| 5. | Loss of appetite | | |
| 6. | Facial puffiness | | |
| 7. | Fever | | |
| 8. | Mental irritation | | |
| 9. | Discolouration of hairs | | |
| 10. | Skin changes | | |
| 11. | Angular stomatitis | | |


Sex Reference
Male children
Female Children
15%
85%


Age Reference
Percentage
60%
50%
40%
30%
20%
10%
0%
45%
55%
3-6years
6-12 years


Socio- Economic status
Percentage
80%
70%
60%
50%
40%
30%
20%
10%
0%
75%
25%
0
Poor
Middle
Rich


Treatment Reference
Percentage
60%
50%
40%
30%
20%
10%
0%
55%
30%
15%
Good
Moderate
Mild

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